The Builder.

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House at Denbigh.....Mr. E. Guy Dawber, F.R.I.B.A.
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The Church of Lostwithiel.

THE ancient town of Lostwithiel, Cornwall, is pleasantly situated at the head of the picturesque estuary of the Fowey. Its situation accords with that usually chosen in like localities, namely, at the highest point to which vessels or boats using the water could be carried by the tide. About a mile from the old borough are the fine ruins of Restonnel Castle, but the town itself has not much of interest remaining save the Church of St. Bartholomew with its noble spire.

Robert de Cardinham was lord of Lostwithiel *temp.* Richard I., and the town owed to him much of its former importance. He obtained the privilege from the Crown of establishing a weekly market, paying ten marks for the licence. He also granted a charter to the town about the year 1196, confirming the burgesses and men of Lostwithiel in all honours, liberties and quittances, and establishing new ones. Among the ordinances of this charter is one prohibiting a stranger out of a ship keeping shop in the town, save by permission of the provost and community, thereby proving the considerable foreign trade that was even then done in this town and district.

About 1219 Andrew de Cardinham gave the town and the advowson of the church to the Priory of Tywardreth. This Benedictine priory lay about 3½ miles south-west of Lostwithiel; it was itself only an alien priory, being a cell of the Abbey of St. Sergius and St. Bacchus, in Normandy. Most of the churches immediately around were appropriated to this priory. The priors were appointed direct by the mother-house, and were almost invariably foreigners (together with the majority of the monks), up to the time of the suppression of the alien houses at the beginning of the XVth century, and hence there was considerable foreign influence in the town and district. When most of the alien priories were suppressed, Tywardreth had sufficient influence to obtain a charter of denization. The vicar of Lostwithiel in the old days could have had comparatively little influence as compared with the prior of Tywardreth, for, although appointed for life on the prior's presentation, the vicarage was about the most poorly endowed in all Cornwall. Not only did all the big tithes go to the priory, but the vicar himself had to pay a pension of 20s. to the priory, and when that was paid his own assured income was only 2*l.* 13s. 4d.

It will be presently seen that these brief historical statements are of interest as pertaining to the architecture of the church. There is also one other recorded incident in the past history of Lostwithiel that has an important bearing on the story of the fabric and its present condition. In the summer of 1644 this town was made the headquarters of the Earl of Essex's Parliamentary forces, who had recently defeated the Royalists in a battle near the borough. In Dugdale's "Short View of the Late Troubles in England" (1681) occurs this passage, under date August, 1644:—"At Lestithiell in Cornwall, when the Earl of Essex was there with his Army, one of the Souldiers brought a Horse into the Church, led him up to the Font; and made another hold him, whilst he Sprinkled water on his Head, and said 'I signe thee with the signe of the Cross in token thou shalt not be ashamed to fight against the Round Heads at London,' with a deal more of such Blasphemous stuff; blowing up that Church with Gunpowder at their departure." We get further particulars both of the sacrilege at the font, and of the damage done to the church by gunpowder, from the diary of Richard Symonds, a lieutenant in the King's forces, who went through the whole of the Cornish campaign of 1644.

The church of St. Bartholomew, situated in the centre of the town, consists of quasi-chancel, clearstoried nave of five bays, north and south aisles, north and south porches, with western tower and spire. The whole ground plan of the church, exclusive of the tower, has an interior measurement of about 75 ft., whilst the width (including the aisles which are continued flush with the chancel) is 48 ft.

It is not known when a church was first built at Lostwithiel, but probably not until Norman days. In the charter of Robert de Cardinham, at the end of the XIIth century, he refers to the privileges of the inhabitants which "his ancestors gave them of old on the day when they

founded the town." There can be no manner of doubt that the town had a church during the Norman period, which was probably one of some magnitude; but nothing now remains of such a structure. In the south wall of the church, in the most western bay, between the porch and the tower are two plain exterior sepulchral recesses. They have never contained effigies within memory, but a steady tradition has been maintained that here were buried Robert de Cardinham and his wife. During the alteration of 1890 human bones were found beneath the slabs in each recess, but no trace of any kind of coffin. It is by no means impossible that tradition is right, and that these recesses were originally constructed for the great lord of the town and his lady, when the church (then a rectory in their own control) was proposed to be rebuilt in the new English style then coming into vogue, at their expense. Robert de Cardinham (or Cardinan) was by far the largest landowner in the county, and his lady was the wealthy heiress of FitzWilliam. We may be quite certain that these recesses are over the graves of persons of importance and locally respected, for it is obvious that they are of earlier date than the walling around them, and were carefully preserved when a later church was built.

The only part of the church that can be now assigned to the Early English period is the tower, which was originally a plain but well-built structure early in that period of two stages, and apparently crowned with a low, broached spire. On the west side there are three low buttresses that reach up about two-thirds of the height of the first stage. Probably these are all of later work than the tower itself; at all events, this is the case with the centre one of the three, for there are indications of the head of a blocked-up window above it. There are lancet lights in the first and second stages of the north and south walls of the tower, and in the upper stage of the west wall. The angles of the low broached spire rising from an elementary third stage can be detected on close examination both on the west and south sides.

A remarkable feature of this tower—which fully accounts for its somewhat exceptional shape and construction—is that it was built over a right of way. There was a public footpath that passed beneath this tower, through north and south open doorways, until the restoration of 1878-9, when the way was closed and doors supplied to these two tower doorways. This tends to prove that the *circa* 1200 church was an extension to the west of its Norman predecessor. The evil result of such an arrangement as this, so far as the dignity or beauty of the interior of the body of the church is concerned, was that there could be no archway from the tower into the nave. There is merely a somewhat mean-looking doorway at the west end, with a square light into the ringing-chamber above it.

On the west front of the tower there are the weather mouldings of the acutely-pitched Early English roof still discernible above the present roof of the nave.

Fairly early in the XIVth century came about the enrichment of this church by the addition of an exceptionally beautiful spire, which the late Mr. Street termed "the pre-eminent glory" of the West of England. It required, too, consummate skill to add such a work to an earlier tower. An octagonal lantern was built up around the base of the old broached termination to the tower; each of the eight sides is pierced by gabled coupled lights, having a quatrefoil in the apex and crossed in the centre by a transomed panel of four open quatrefoils—save that in the north-east light a circle of six trefoils forming a wheel takes the place of the four quatrefoils. The whole effect of this singular arrangement is surprisingly light and graceful. The octagonal spire that rises from amidst this lantern to a height of about 110 ft. has four dormered lights on the cardinal faces. The actual spire seems scarcely worthy in its finish and proportions of the noble lantern, and it has probably often been, perforce, repaired in the six centuries of its life. It is known that it was struck by lightning in 1757, and on that occasion it is supposed to have been restored to only a portion of its original height. In 1876 it suffered from a violent gale; and in 1883 it was repaired and raised to its present height, which is still considered to be somewhat less than its original proportions.

Somewhat later in the XIVth century than the construction of this lantern and spire, the work of completely rebuilding the church, such as it now stands, was taken in hand. The nave and continuous chancel are divided from the aisles by arcades of five arches on each side. The piers have no capitals, the mouldings being carried up continuously into the arches. Such an arrangement, common enough in the north of France, is decidedly uncommon in England. The whole effect of these arcades is distinctly foreign; they closely resemble the arcades of like date at the fine church of Fowey at the mouth of the estuary. Mr. Street had no doubt that the idea, if not the actual workmanship, came from across the seas. And Mr. Street had made no study of the history of the place. Had he done so he would at once have seen the reasonableness of such a notion, for the prior of the alien priory of Tywardreth, himself a foreigner, would have the chief say, as rector and townsman, in this general scheme of rebuilding. Moreover, the stonework of the arcading is almost certainly from Normandy; and it would be probably almost as cheap, if not cheaper, to bring this freestone across the seas and up the Fowey than to use English freestone carried overland by bad roads from Bath or from places yet more remote.

The westernmost arches of these arcades are rather lower, and in other respects slightly different from the remainder. Possibly this denotes the beginning and interruption of a plan at the same time as the spire, which was taken up and completed on somewhat different lines later in the century. Can it be that this is one of the several instances wherein church building was for a time checked by the ravages of the Black Death of 1348-9?

The clearstory windows over the lean-to aisles—irrespective of clearstories being of highly exceptional occurrence in Cornwall—are most unusual. There are only four on each side, and they consist of three grouped lancet lights, the centre light somewhat the highest. They are of the plainest construction, and, without the gunpowder incident detailed by Symonds and Dugdale, would have been difficult to explain. But an explosion strong enough to lift the roof would be certain not only to blow the glass out of all the windows, but to materially damage the walls on which the roof rested. There can be no doubt whatever that the walls above the arcades would require much reconstruction after the explosion of 1644. Possibly there would be mere patching up until after the restoration of monarchy and episcopacy in 1660. The somewhat plain square-headed windows of the side walls of the aisles are not original; a good deal of the work is of last century restoration. One noble feature of the church was spared, so far as the XIVth century mullions and tracery (though somewhat repaired) are concerned, when the gunpowder wrought such havoc. The great east window of the chancel of five lights is unusually large, measuring 34 ft. high by 14 ft. wide. The tracery is a remarkably good example of the later geometrical style. Above each light is a trefoil, and above these five trefoils are rows of four, three and two quatrefoils respectively, with a single quatrefoil in the apex. It may be remarked that this window was filled with stained glass (Clayton & Bell) in 1886, which is exceptionally good for that date.

The large XIVth-century octagonal font of Pentewan stone has a diameter of 33 in., and stands 47 in. high. The bold carvings on the different faces are not a little remarkable. Facing east is the rood with Saints Mary and John. Next comes, in bold relief, a huntsman on horseback, with horn held to his lips by his right hand, and falcon on his left hand; a hound precedes the horse. The north face has two lions passant. Projecting 6 in. from the next face is a grotesque human head, with two interlaced snakes dependant from the crown, the head of each snake being just over each ear. The west face has a tracery pattern of quatrefoils. The next panel has the figures in relief of two quadrupeds; one, perhaps a hound, seizing the other (? a wolf) by the hindquarters; a figure above these is much mutilated, but is possibly a second hound. The south face is also tracery work, chiefly quatrefoils. The eighth face represents a mitred head, which projects 4 in.; from the ears and corners of the mouth proceeds foliage. The bowl stands on five shafts with channelled mouldings. An ingenious explanation has been offered of the series of carvings on the font panels as denoting the outline life of a man once given up to worldly lusts and pleasures who, by the power of the Holy Spirit, was changed and became a bishop of the Church. This is creditable to the ingenuity of the inventor, but scarcely probable. Hunting scenes are often found on early fonts, and no one would have regarded such a pursuit as an evil; but that there is an intentional contrast between the snake-entwined head listening to all the suggestions of

evil, and the regenerated mitred head bringing forth the fruit of good works, there can be but little doubt. The two lions passant doubtlessly betoken the arms of the donor of the font; but such a charge, especially without the tinctures, is difficult to identify, for it was borne by so many families, among others by Carter of St. Columb, Cornwall.

This remarkable font used to stand at the west end of the nave. It was moved early in last century, when an interesting alabaster tablet sculptured in bas-relief was found beneath it; it was in good condition, and had doubtless been buried (as was the case with the fine alabaster Pieta in Breadsall Church) for preservation during the iconoclastic period of the Reformation. The carving represents the painful scene of the martyrdom of St. Bartholomew, the patron saint of the church. The style of the work is late XIVth century, and it was doubtless brought to Lostwithiel at the time of the rebuilding of the parish church. It is of Derbyshire alabaster, and almost certainly came from the great gypsum pits of Chellaston, whence the Nottingham artificers in such objects of devotion obtained their material. This alabaster panel, which is 1 ft. 10 in. long, was placed over the doorway into the tower, at the west end of the nave, in 1879. It is too high for inspection, but as the scene (repainted) of the flaying of St. Bartholomew is too realistic for modern taste, its height is, perhaps, an advantage.

Against the pier by the south entrance, close to the font, is a singular oak alms-box, which stands 38 in. high, apart from the modern box now affixed to the summit. On the upper face is the following, in raised characters:—"W. T. Maier. 1645." The lower part represents a clumsily-executed human figure with hands erected, bearing a large uncharged shield. On one side of the upper part were the initials R. L. Bad as is the taste of this alms-box, the date shows that the church was at least in some kind of use the year after the explosion.

Outside the south porch is the tomb of the donor of this poor's box, consisting of a substantial granite chest tomb, with a somewhat mutilated covering slab of slate, having a well-cut floral border of rose and thistle. The inscription is partially obliterated, but commemorates "William Taprell (of)ten Mayor of this Borough."

There is a trefoil-headed piscina niche on the south side of the chancel, and there are also piscinas in each of the chancel chapels. In the south porch there is a somewhat unusual holy water stoup of quatrefoil shape.

When the church was restored in 1878-9 some handsomely-carved corporation pews, dated 1776, were removed. However, the well-carved arms of the borough and those of the first Earl Mount-Edgcumbe (Recorder of the borough) have been preserved, and are placed against the piers each side of the chancel. Like over 90 per cent. of Cornish churches, Lostwithiel has no chancel arch, but there are signs of where the rood-loft stood, which went right across the church.

Against the north wall is the much worn brass of a squire in plate armour, with well-defined circular spur rowels of five points; the lower part of the cross-hilted sword is missing. The epitaph below runs:—*Hic jacet Tristramus Curteys Armiger qui obiit quintodecimo die Aprilis Anno dni millimo CCCCXXIII. cujus amine propicietur Deus, Amen.* The ancient family of Curteys held a high position in the town and neighbourhood. and represented the borough in several Parliaments from Edward I. onwards. Tristram Curteys of this monument was Member for Lostwithiel in the Parliament of 1421. Leland, in the time of Henry VIII., wrote of his descendant as "a man of 100 marks land, dwelling between Blowgham and Penknek by Lostwithiel." A stained-glass window of the south aisle is to the memory of various members of the Curteys family between 1810 and 1866; though Lysons, writing in 1814, states that the family is extinct.

The only other monument of any age in the church is one to Temperance, the wife of William Kendall, 1579.

There is a singularly fine double set of silver-gilt communion plate, of the date 1775.

For certain particulars in this account of Lostwithiel church we are indebted to information kindly supplied by the vicar, the Rev. R. D. Purves.

NOTES.

York Minster.

THE Secretary of the Society for the Protection of Ancient Buildings has written to the *Times* protesting against the erection of new buttresses and flying buttresses on the north side of the nave of York Minster, in imitation (as we conclude) of those existing on the south side. We have printed one or two letters from residents in York protesting against the work, which we did not at the time support by any comment of our own, as it is so difficult to get at the truth in these cases; local correspondents almost always exaggerate these things, and we were unwilling to join in an attack on Mr. Bodley, who is the architect in charge. If, however, Mr. Thackeray Turner has got the facts correctly, we must say that we agree with him. There is no doubt that the original builders of the nave would have vaulted it in stone if they had not been afraid, and that they erected flying buttresses on one side at all events in preparation for the thrust of the vault, but subsequently shirked it, and constructed a sham vault of wood (for there were shams even in the Middle Ages). Now, if it were proposed, at this eleventh hour, to carry out the stone vault, and build the necessary buttresses to resist its thrust, we should be in sympathy with that (though we have no doubt Mr. Turner and his Society would hold up the hands of horror at such an idea), because that would be carrying out in a logical and constructional manner a work which would complete what the original builders wished but were afraid to do, and would make the nave a monumental erection in a sense in which it is not so now. But if there is no such intention (and we have not heard of it), then the building of flying buttresses which will be not only useless but prejudicial to the structure, is an absolute absurdity and a waste of money, and ought to be strongly opposed on grounds of ordinary common sense.

The Kilmarnock Bridge Collapse.

FORTUNATELY we very seldom hear in this country of accidents such as that which occurred at Kilmarnock last Saturday afternoon. The structure, which failed almost immediately after it had been formally opened, was a small wire-rope suspension bridge over the river Irvine. Being designed simply for foot passengers, the bridge was only calculated for a maximum load of 20 tons, and it appears that, upon the conclusion of the opening ceremony, numbers of the people who had collected on either bank of the river rushed upon the platform with the object of being among the first to make use of the new means of communication. This ambition was defeated by reason of two developments: the first being a scrimmage caused by the meeting of the competitors in the middle of the span, and the second the sudden collapse of the structure. As the platform of the bridge was only a few feet above the water, which is of no great depth at the site in question, no lives were lost, although several persons were somewhat seriously injured. The suggestion has been made that the mishap was due to a flaw in a link of the anchor chains and that this caused the chain to give way, thus throwing the whole strain upon one side, and pulling one of the wire ropes through the socket of the fastening block. No doubt the bridge may have failed in this way, for a chain is bound to give way at its weakest link, but we think the contributory cause is less likely to have been a flaw in the metal, than the weight and dynamic effect of some two or three hundred athletic Scotsmen wildly struggling in a dense mass on the platform of the frail structure. The Ibrox Park and the Perth disasters* already teach us that the influence of crowds on the safety of structures is not universally recognised in Scotland. These disasters, however, might have suggested to the authorities of Kilmarnock the desirability of taking precautions to prevent any dangerous overcrowding on the new suspension bridge.

Motor-Cars.

THE debate on Motor-Car Traffic and Regulations, if it has done nothing else, has shown the general feeling of the country upon the subject, as expressed by the county members. There is no use in blinking the fact that the moderate motorist is such a *rara avis* that few have the pleasure of meeting him, at any rate in the country, and that the large majority of motorists take little care to consider anyone but themselves. Two points at least require consideration in the law. In the first place, it is the owner who should be made liable to penalties for offences against the Act, and not merely his servant, the chauffeur; and in the second place, the local authorities should be given a free hand in regulating this traffic in their districts. It is difficult to appreciate the attitude of the Local Government Board in this matter.

* The *Builder*, Vol. lxxxiii., p. 27, and Vol. lxxxv., p. 153.

They are often jealous that the sanctity of local government should suffer no violation; thus in the matter of building by-laws the public are informed that the discretion of the local authorities must not be interfered with from headquarters, and that, having got local self-government, we must abide by it; yet under section 9 of the Motor-Car Act the local authorities have to obtain the consent of the Local Government Board before making any restrictive order in their districts. What has been the result? We are informed by the President of the Local Government Board that only forty-nine authorities made an application out of a total of 277, but when we find that only two applications have been granted, and when it is remembered that these applications are followed by local inquiries, at which motorists are represented by legal practitioners, and much expense is involved, it is hardly surprising that more applications have not been received. Many roads are entirely unfit for express traffic; they were not made for it, and abound in curves and dangerous places. These dangers are particularly within the knowledge of the local authorities, and here at least they should be given a free hand.

Tramways on the Embankment. AFTER full discussion a Select Committee of the House of Commons have now decided in favour of the proposals made by the London County Council for joining up the Westminster and Blackfriars tramways by means of a connecting line along the Victoria Embankment. But this decision is very wisely qualified by the conditions that Blackfriars Bridge must be widened and that provision must be made for safeguarding the tunnel of the District Railway. The matter is not yet settled, because there is no power in the present Bill for widening the bridge, and it will not be known until the end of this month whether the City Corporation will be prepared to facilitate the tramway project by exercising their own powers. If the Corporation should prove unwilling to make a working agreement with the County Council, the only alternative will be the presentation of another Bill next year. In the meantime it is satisfactory to find that the Select Committee are agreed that the scheme generally is a beneficial one, and that the tramway will constitute a much-needed improvement in traffic facilities.

Bridge Building in New South Wales. IN the Report of the Public Works Department of New South Wales some interesting particulars are given relative to the maintenance of existing bridges, to the number of 3,508, and with an aggregate length of 328,941 ft.; the completion of forty-six new bridges in various parts of the country; the progress made upon twenty-nine bridges in course of construction; and the designs for projected works of the same character. Bearing in mind the comparatively small sum annually placed at the command of the Commissioner and principal engineer, it is quite clear that new construction must be retarded and maintenance requirements must fall into arrears unless considerable additions be made to future votes. Of the new bridges opened for traffic last year the most noteworthy is one across the Hunter River at Luskintyre, having a total length of 917 ft., and including two steel truss spans each 198 ft. long and 25 ft. deep, in addition to fifteen timber spans, two of 30 ft. and the remainder of 35 ft. The centre pier, 60 ft. high above the river bed, is sunk 38 ft. below that level to bed rock, and owing to its great height the wrought-iron cylinders were placed on a batter of 1 in 12 to secure a wide base, the cylinders being braced together laterally and connected to 6 ft. diameter cast-iron cylinders forming the foundation below the river bed. It is satisfactory to note that this structure has sustained without injury several high floods, one of which completely carried away a low-level bridge a short distance downstream. Another point worthy of remark is that the independent truss design adopted in this work shows a considerable saving in first cost over the continuous girder bridges previously built across the Hunter River. Moreover, the cost of maintenance should be much less, as the area of members requiring to be painted is comparatively small.

Timber for Railway Sleepers. RAILWAY engineers, like all professional and business men, are apt to let their practice run in grooves, sometimes created by themselves but more frequently by their predecessors. The point of this note is to draw attention to the superiority of hand-hewn over sawn sleepers for permanent-way construction. Established custom in England is in favour of the last-mentioned treatment, which continues to be specified as a matter of course. In progress of time the marked superiority of axed sleepers will be duly recognised in this country as elsewhere. Australian railway engineers, who ought to be capable of forming reliable opinions on the subject, are unanimous in the adoption of nothing but hand-hewn sleepers, thinking durability more important than mere appearance. After all, as the bottom of a sleeper is never seen, and as the sides are more or less covered by ballast, very little is gained by insisting upon the use of a saw, if the top surface be truly faced up. Timber experts show that the hand-dressed sleeper is the more durable, as it is axed with the grain, and the action of the tool, effectually closing up the outer pores of the wood, results in comparative immunity from cracking and splitting when the sleeper is laid in the road. Another important consideration is that sawing involves an increased cost of from 3d. to 6d. per sleeper, according to size. A railway track is never a thing of beauty, and there is no reason for wasting money and sacrificing strength and durability out of regard for mere appearances in such work.

Electric Lamps. IN the *Bulletin* of the Société Internationale des Électriciens, which has just been published, there is a valuable and suggestive paper by M. Bainville discussing methods of improving the design of glow lamps. He points out that the ratio of the energy of the light rays emitted by a carbon filament to the total energy radiation is less than 3 per cent., and thus it is possible that the cost of the electric light may be very considerably reduced in the near future. From the theoretical point of view, the ideal filament should possess a polished white surface which would remain unaltered at high temperatures. The carbon filament, therefore, is far from satisfying the theoretical requirements, and the author tested lamps with filaments of osmium and tantalum respectively to see whether higher efficiencies could not be obtained. He found that one of the osmium lamps made by Dr. von Welsbach only took about one-third of the current required by an ordinary glow lamp in order to give the same light. The drawback to this type of lamp, however, is that, as at present constructed, it is not suitable for running on ordinary lighting circuits as the filament is so brittle. With the tantalum lamps of Messrs. Siemens & Halske equally high efficiencies were obtained, and the lamp is quite suitable for every-day use. The experiments of physicists during the last few years have proved conclusively that the emissivity of a body for light rays does not depend merely on its temperature. The laws, therefore, which are given in nearly all the standard works on light and photometry as to the light emissivity of incandescent bodies need to be extensively modified. A square inch of incandescent platinum gives out much more light than a square inch of carbon when both are at the same temperature. Now the physical properties of tantalum are very similar to those of platinum, and thus the high efficiency of the tantalum lamp is probably due to the fact that as its temperature increases the ratio of the light radiation to the total radiation also increases. In commenting on this paper, M. Guillaume, one of the leading continental physicists, emphasises the importance of the new physical laws discovered, and points out their application in lamp manufacture. He also states that he has found that the "luminous efficiency" of a carbon glow lamp—that is, the ratio of the luminous radiation to the total radiation—is much less than 3 per cent.

Sanitary Condition of Haverfordwest. DR. J. SPENCER LOW'S report to the Local Government Board upon the sanitary circumstances and administration of the Haverfordwest rural district discloses a disgraceful state of things. Dwellings presenting unhealthy conditions abound throughout the district. The common defects are dampness and absence of sufficient light, ventilation, eave-spouting, and proper flooring. In some instances the interiors of dwellings are very dirty. Water supply is in a most unsatisfactory condition; water for many outlying cottages being derived from roadside dipwells, liable to pollution by road washings and to fouling by cattle. A large proportion of the houses in the district is absolutely unprovided with closet accommodation; the occupants of such houses being compelled to resort to their gardens, to fields, or to other convenient places; or to use pails inside their houses, emptying the pails of excrement wherever they can. The contents of middens and privies are disposed of in Fishguard by emptying them over the cliff, thereby occasioning filthy accumulations on the

foreshore and causing grave nuisance. It is not surprising to find, after this, that "there has been an outbreak of diphtheria in Fishguard."

The Montague Fordham Gallery.

THERE is at present on view at the Montague Fordham Gallery a charming collection of jewellery and shagreen by Mr. Paul Cooper. Perhaps the greatest test of a metal-worker's ability in design is whether he can turn out a cup or bowl of good outline; Mr. Cooper shows both. After seeing these we can enjoy to the full the beauty and quaintness of the gold and silver jewellery ornamented with precious stones, the work of the same hand. Each piece is a romantic little design of the pre-Raphaelite or Gothic type of inspiration. In nearly all cases the stones are used to ornament the metal and not the metal to set the stones. The workmanship throughout appears to be thorough and much more highly finished than is too often the case with modern English jewellery. Other exhibits of interest at the gallery are some pieces of pottery by Messrs. Martin Bros., and useful objects in iron, brass, and bronze by Mr. E. Spencer.

LETTER FROM PARIS.

THE Musée des Arts Decoratifs, definitely arranged in the Pavillon Marsan, has at last been formally opened. The ceremony has afforded an opportunity for appreciating the work of the architect to the Louvre, M. Redon, who has entirely transformed the portion of the Tuileries along the Rue de Rivoli and facing the Pavillon de Flore. Sixty new rooms have been allotted to the Union Centrale, which at its commencement was installed in the Palais de l'Industrie. The removal of that building has been the occasion for giving the collection a much larger and more sumptuous home, in which, thanks to M. Peyre and other generous donors, it can be grouped on a methodical system and with provision for future extension. The new rooms have been arranged by M. Redon around a very large central gallery lighted from a series of small cupolas. The central hall, preceded by a vestibule, leads to a large gallery looking on the Tuileries, the balcony of which overlooks the old "Jardin Royal." The Museum will be open every day, from mid-day on Mondays and from 10 o'clock on other days, till 5 p.m. in summer or 4 p.m. in winter. The entrance will be one franc on ordinary week-days, half a franc on special holidays, and free on Sundays.

At the other end of Paris, in the middle of the Bois de Boulogne, another museum has just been opened which will find great favour in Paris, especially in the artistic world—that of the Château de Bagatelle, the former home of Sir Richard Wallace, purchased by the Municipality of Paris, and put gratuitously at the disposal of a group of wealthy amateurs, who allow their collections to be seen there at the cost of a small entrance free, the proceeds of which will be devoted to the purchase of such works of eminent masters as may be offered to the City of Paris with the view of forming a permanent collection. Various pictures of the English school have formed the subject of the first exhibition, which occupies one of the pavilions, and includes works by Gainsborough, Hoppner, Reynolds, Romney, Lawrence, and Constable. In the other pavilion, which is a kind of small edition of the Trianon, built by the Comte d'Artois and bearing his motto "Parva Domus sed Apta," is a collection of furniture and curiosities of XVIIIth century art, containing many rare and beautiful objects, arranged so as to give the impression of the interior of a princely mansion of the pre-Revolution period.

At the Galliera Museum the illustration of Industrial art is well kept up. Following on the exhibitions of bookbinding, of ivories, and of lace, we have now an exhibition of metal work—wrought iron, copper, and pewter. No exhibition in Paris is of more value to artists and craftsmen. In instituting these annual exhibitions the Municipal Council has proposed to render the Galliera Museum a place for the encouragement and instruction of those, either already famous or still unknown, who are applying original invention and technique to objects of practical use. The present exhibition includes lamps and lighting standards of various kinds, doors, stair balustrades, cages for lifts, etc.; many of them representing the work of the best artists of this class in the present day—Jules Brateau, Carrière, Alexandre Charpentier, Desbois, Brindeau, Deschamps, Larche, Pierre Roche, Lucien Magne, Dampt, Hœntschel, and others; the whole forming an excellent and valuable illustration of applied art.

On the 10th inst. the Académie des Beaux-Arts will proceed to the election of an artist to succeed the late lamented sculptor Jules Thomas. The most prominent among the candidates spoken of M. Injalbert and M. Saint-Marceaux; after them, MM. Peynot, Verlet, Hugues, Tony Noël, Gustave Michel, and Gardet. The last-named is supposed to have considerable chance, especially in view of the fact that the predecessor of Jules Thomas was a celebrated animal sculptor, Barye. The Académie, it may be added, is at present in much anxiety in regard to one of its most brilliant members, M. Henner, whose serious illness, at his advanced age, threatens a new loss from their ranks.

The new and energetic Under-Secretary of State, M. Dujardin Beaumetz, whose zeal for art and artists is constantly displayed in some new form, has just put an end to an abuse which has existed for many years. It is known that the Government possesses, at the Depôt des Marbres in Rue de l'Université, a series of studios, the use of which has been granted gratuitously to artists, some of whom have assumed a permanent right in what was only intended as a temporary convenience. This will now be altered, and these studios will only be lent to artists who have to execute an important Government commission, and then only during such time as the work is in progress. This perfectly reasonable and just decision has caused a great deal of umbrage to some well-known artists, who had got into the habit of considering themselves on their own premises in these large and convenient studios, where they could carry on their private commissions without paying any rent for their studio. M. Dujardin Beaumetz has also appointed, as a member of the "Conseil Supérieur de l'Enseignement des Beaux-Arts," M. Antonin Carlès, the sculptor, in place of M. Gustave Michel, who has been appointed a Professor at Ecole des Beaux-Arts.

In spite of the Parliamentary debates on the separation of Church and State, the work of the Church of Sacré Cœur goes on, slowly indeed, but without interruption. The foundations are just completed for the great campanile which is to be raised near the *chevet* of the church, and will dominate all Paris. The substructures have now been brought up to the grand level, and the building of the tower itself can be commenced without further delay.

A great deal of criticism has been aroused by the bad taste shown in the decoration carried out in the Avenue de l'Opéra in honour of the visit of the King of Spain; the more so as there is talk of retaining permanently what was at first carried out only as a temporary scheme. This decoration comprises a series of flower vases of commonplace and heavy design, in imitation bronze surface, placed at intervals all along the avenue, mounted on pedestals or pillars destitute of style. At each extremity of the street have been established two erections consisting of basins supported by terminal female figures, also in imitation bronze. There is no really artistic note in the whole scheme, and it would have been anything but gratifying to Chas. Garnier as an accompaniment to his great building.

The Medaille d'Honneur for Architecture at the Salon has been awarded to M. Chifflot, for his set of drawings exhibited under the title "Etude sur l'habitation antique," and described in our article on "Architecture at the Paris Salon." In the section of Painting the medal has not been awarded; in that of Sculpture it has been awarded to M. Sicard.

APPOINTMENT OF SANITARY OFFICER.—The Local Government Board has sanctioned the appointment of Mr. W. Johnson as a sanitary inspector in the Metropolitan Borough of Poplar.

COMPETITION FOR PUBLIC BATHS AND WASHHOUSES, HAMMERSMITH.

SIX architects were invited to compete for this building, and their designs have been exhibited this week in the Hammersmith Town Hall. The site selected for the building is of ample area but curious shape. On the east side it has a frontage of only 70 ft. to Lime-grove, while the total depth of the site is about 520 ft. The only other street adjoining the site is Scott's-road, which runs along the rear two-thirds of the south side. On the north of the plot of ground the technical school will be built, and to the west of a projecting wing of this building, the width of the ground is approximately double that of the easterly portion. With the exception of the two frontages to Lime-grove and Scott's-road, there appear to be no rights of light over any of the adjacent properties, and this fact has added materially to the difficulty of planning the buildings.

The accommodation required included a first-class swimming-bath, 105 ft. by 34 ft., arranged for use by women on certain days, a second-class swimming bath, 100 ft. by 30 ft., four unequal groups of slipper and lassar baths (first and second class for men, and first and second class for women), with provision for future extensions, a public washhouse and ironing-room, with provision for a future doubling of the accommodation, residences for the superintendent and engineer, a committee-room and offices, clubroom, lavatories, etc. Competitors were also asked to provide a chimney-shaft for the joint use of the Baths and Technical Institute, and as the boilers of the latter building are to be placed in the wing mentioned above, the best position for the boilers of the baths is obviously near this point. Another condition, which has not been fully considered by all the competitors, was to the effect that the requirements of the London County Council in connexion with the granting of a music and dancing licence in respect of the first-class swimming bath must be provided for. Other accommodation necessary in a building of this class, such as a separate laundry for the bathing establishment, was not mentioned in the instructions. The limit of cost was fixed at 45,000*l.*, and each competing architect will receive a fee of 25 guineas.

The six designs submitted in the competition were hung in the council chamber in numerical order, but the authors' names were not given. In the accepted design (No. 4), Mr. J. E. Franck has mastered the difficulties of the site more thoroughly than any of the other competitors, and has produced a simple and convenient plan. By careful restriction of the space given to open areas he has been able to provide all the accommodation on the ground floor, with the exception of the committee-room and the residences for the superintendent and engineer. As these rooms on the upper floors are placed along the frontages to Lime-grove and Scott's-road, windows can be used for lighting them and the rooms under, while for all the other rooms and corridors direct top-lighting can be adopted. The administrative portion of the building occupies the frontage towards Lime-grove, and has the ticket-office in the middle of the front, with the women's entrance on the left and the men's on the right. Corridors are continued back from these entrances, and between the corridors are the ticket-office already mentioned, a small refreshment-room, and a cycle-room, all of which have doors opening into the two corridors, the refreshment-room and cycle-room being divided by screens into two portions for men and women respectively. To the right of the men's entrance is the superintendent's office, and beyond this is the private entrance to the stairs leading to the committee-room and superintendent's residence on the first and second floors. The space to the left of the women's entrance is occupied by an entrance-hall of ample size, with two entrances from Lime-grove, and with a separate ticket-office, and from the back of this hall the main corridor, 10 ft. wide, runs along the south boundary of the site to the first-class swimming-bath the corridor terminating with exit doors at the east end of Scott's-road. The entrance-hall and main corridor are intended to form the public approach to the first-class swimming-bath when this is used for entertainments. There is also a doorway between the entrance-hall and the women's corridor, so that the main corridor can be used by women on the days when the swimming-bath is reserved for them. The women's corridor runs in a straight line past

the ticket-office, etc., mentioned above, to the first and second class private baths for women, the waiting-rooms being conveniently placed. The men's corridor has a short turn to the right behind the superintendent's office and staircase, and is then continued along the north boundary of the site, the blank wall of the women's private baths being to the left; beyond this, on the same side of the corridor, are the clubroom and men's lavatories, followed by the first-class swimming-bath and small rooms for artistes or club members. The corridor is produced in a straight line beyond the wing of the technical school, and has on the right or north side the men's first and second class private baths, opposite to the boiler-house and establishment laundry on the left, and beyond these it gives access to the second-class swimming-bath on the right, and terminates at the public washhouse on the left. The principal entrance to the second-class baths is in Scotts-road, between the establishment laundry and the public washhouse, and a corridor leads from it in a straight line to the door of the second-class swimming-bath, joining the other corridor at right angles at this point. Entrances to the first-class swimming-bath are also provided in Scotts-road for artistes or club members and for the public, a staircase for the latter being provided to the west end of the gallery of the bath. Another staircase at the east end is entered from the main entrance corridor. The engineer's residence is conveniently placed over part of the establishment laundry, etc., in Scotts-road. Ample space is left in the rear of the site for the future extension of the washhouse, and on the north side, near the technical school, for the extension of the men's private baths, but the small areas reserved for the extension of the women's private baths appear to be somewhat inadequate for the purpose.

Design No. 1 is probably the next in order of merit. The drawings are as complete as eighth-scale drawings can well be made, the engineering details being shown as fully as possible. The swimming-baths, boilers, establishment laundry, and washhouse occupy almost the same positions as those in the accepted design, but the arrangement of the private baths and corridors is different. The superintendent's office is in the middle of the Lime-grove front, and has a semi-circular ticket-office behind it. The men's entrance is to the right of the superintendent's office and the women's to the left, and the corridors from these are continued in a semi-circle around the back of the ticket-office; from the summit of the arc a main corridor leads straight to the middle of the east end of the first-class swimming-bath, the women's first and second class private baths being to the left of this corridor and the men's first-class private baths to the right; the three waiting-rooms, from which these private baths are approached, are close to the ticket-office. Cycle-rooms for men and women are provided close to the respective entrances, and the men's corridor to the swimming-baths runs along the north boundary, as in the accepted design. For the ordinary purposes of the building, the arrangement of the entrances and corridors is excellent, but it does not adequately provide for the simultaneous use of the private baths and of the first-class swimming-bath as a place of entertainment. The men's second-class private baths are placed between the washhouse and the second-class swimming-bath in a very convenient position for future extension.

Design No. 2 is less satisfactory, the communication between the various parts of the building being quite inadequate, and the entrances and main corridor have the same defect as No. 1. The women's private baths are on the first floor, and the boiler-house is in the basement under the washhouse.

The drawings of No. 3 are interesting, but are not fully worked out. The ground floor of the Lime-grove frontage is frittered away; an archway in the middle of this front leads into a courtyard about 37 ft. square, which has the men's first-class private baths on the right, the women's second-class private baths on the left, and the two entrances and two waiting-rooms (for the private baths) facing the archway. This waste of space has necessitated the placing of some of the rooms in the basement and the loss of additional space in areas. The establishment laundry in the basement is about 45 ft. long, and is insufficiently lighted by three windows and a glazed door opening into small areas at the two ends. The club-room has not been provided, and a long corridor, 9 ft. 3 in. wide, is provided apparently for the use of the staff.

In No. 5, also, space is wasted at the Lime-grove end in the excessively large entrance halls for men and women. The women's private baths are placed over part of the men's private baths, and the lighting of the latter suffers in consequence. The establishment laundry is in the basement, and is badly placed to the east of the first-class swimming-bath, the washhouse being to the west. There are vast waste spaces in the basement.

Design No. 6 is better, and differs from all the other designs in having the longer axis of the second-class siwmming-bath placed transversely on the site—*i.e.*, parallel to Lime-grove. A considerable amount of space is given to areas, necessitating the placing of some of the rooms in a basement. The men's second-class private baths are approached from the main corridor, and could not be used without confusion while an entertainment was in progress in the first-class swimming-bath. Externally, the design is more pleasing than some of the others.

The Council have adopted the recommendation of the Borough Surveyor (Mr. Mair) that the author of design No. 4 should be employed to carry out the work, but the proviso is added "subject to its being found possible to carry out the work for the stipulated sum of 45,000*l.*" This design is, in our opinion, the best, and, also, among the least costly of the six submitted.

ST. GEORGE'S CIRCUS CLOCK-TOWER COMPETITION.

THE designs submitted in competition for the clock tower to be erected at St. George's Circus, S.E., were on exhibition last week at the Branch Library, Borough-road. The assessors were Messrs. Thompson & Pomeroy.

The majority of the designs submitted were of a commonplace description, and appear to be the work of pupils or junior assistants. The plain obelisk at present in the Circus is generally preferable to nine out of every ten of the designs submitted.

The first premiated design, by Mr. Jan F. Groll, has already been illustrated in our issue for May 27, but in our opinion it is not the best design submitted. No. 31, the second premiated design (Mr. Leslie Wilkinson), has a distinct individuality, and is superior to it in every respect. It is difficult to understand why the third premiated design has received such a high position. The decorative treatment of this and many of the others is distinctly reminiscent of the flamboyant type of public-house.

No. 9 is a good design, with a severe and dignified treatment. No. 19 has a well-executed perspective, and the design is simple and restrained, and has a good effect. No. 22 is also a good piece of work, and well suited to the site. The base of No. 28 tends to spoil what would otherwise have been a good design.

The perspective of No. 56 is a piece of excellent pen drawing, and the architecture is impressive, but its scale would appear to be too large for the site. No. 63 is a fine design, and the perspective well executed. No. 89 is generally good, but has a somewhat top-heavy appearance. No. 91, a large and imposing structure, could surely never be built for the 1,500*l.* which we understand is the cost limit. The same would apply to No. 106, an effective and rich piece of work decorated with sculpture.

On the whole, the results of the competition are decidedly disappointing.

SALES OF PROPERTY, LONDON.—There have recently been placed in the market No. 78, South Audley-street, Mayfair, which was recently built by Messrs. Trollope & Colls, under the directions and superintendence of Messrs. Ernest George & Yeates; West House, Campden Hill-road, Kensington, the home of the late George Boughton, R.A., and built after designs and plans by Mr. R. Norman Shaw, R.A.; No. 24, Abingdon-street, Westminster, formerly the home of Telford, who died there in 1834, of which the freehold was sold for 14,300*l.*; the Little Sutton estate, of about 9 acres, at Chiswick, in the midst of which stands a house erected after Sir William Emerson's plans and designs; and the house in Arlington-street, Piccadilly, wherein Lord and Lady Nelson lodged in the winter of 1800-1, and in which, as Haslewood records, occurred the rupture which resulted in their separation.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A BUSINESS meeting of this Institute was held on Monday at No. 9, Conduit-street, W., to receive the report of the scrutineers appointed to direct the election of the Council, Standing Committees, etc., and to elect candidates for membership. The following gentlemen have been elected to form the new Council:—

President: Mr. John Belcher, A.R.A.

Vice-Presidents: Messrs. E. T. Hall, H. T. Hare, Leonard Stokes, and Sir John Taylor.

Honorary Secretary: Mr. Alex. Graham, F.S.A.

Members of Council: Messrs. W. H. Atkin Berry, J. J. Burnet, A.R.S.A., W. D. Caröe, M.A.Cantab., F.S.A., T. E. Collcutt, A. W. S. Cross, M.A.Cantab., Ernest George, James S. Gibson, J. Alfred Gotch, F.S.A. (Kettering), E. A. Gruning, Ed. W. Mountford, Professor Beresford Pite, A. N. Prentice, G. H. Fellowes Prynne, John W. Simpson, John Slater, B.A.Lond., C. Harrison Townsend, Paul Waterhouse, M.A.Oxon., and Ed. Woodthorpe, M.A.Oxon.

Associate-Members of Council: Messrs. R. S. Balfour, Henry A. Crouch, W. A. Forsyth, and H. V. Lanchester.

Representatives of Allied Societies: Messrs. A. W. Brewill (Nottingham Architectural Society), G. Bertram Bulmer (Leeds and Yorks Architectural Society), Thomas Cooper (Birmingham Architectural Association), H. L. Goddard, M.A.Oxon. (Leicester and Leicestershire Society of Architects), John Keppie (Glasgow Institute of Architects), W. M. Mitchell (Royal Institute of the Architects of Ireland), G. H. Oatley (Bristol Society of Architects), P. C. Thicknesse (Liverpool Architectural Society), J. H. Woodhouse (Manchester Society of Architects).

Representative of the Architectural Association (London): Mr. E. Guy Dawber.

The members of the Standing Committees are:—

Art.—Messrs. J. Macvicar Anderson, F.R.S.E., R. S. Balfour, Arthur T. Bolton, J. J. Burnet, A.R.S.A., W. D. Caröe, M.A.Cantab., F.S.A., T. E. Collcutt, H. C. Corlette, E. Guy Dawber, Ernest George, J. S. Gibson, S. K. Greenslade, H. T. Hare, H. V. Lanchester, Walter Millard, John W. Simpson, and Paul Waterhouse, M.A.Oxon.

Literature: Messrs. John Bilson, F.S.A., A. W. S. Cross, M.A.Cantab., W. A. Forsyth, C. E. Mallows, W. A. Pite, G. H. F. Prynne, Professor R. Elsey Smith, Professor F. M. Simpson, R. Phenè Spiers, F.S.A., Hugh Stannus, Charles Harrison Townsend, W. H. Ward, M.A.Cantab., Leslie Waterhouse, M.A.Cantab., Paul Waterhouse, M.A.Oxon., A. Maryon Watson, B.A.Lond., and P. S. Worthington, M.A.Oxon.

Practice: Messrs. W. H. Atkin Berry, Max Clarke, E. R. Hewitt, George Hubbard, F.S.A., H. Hardwicke Langston, J. Douglass Mathews, John Murray, W. Hilton Nash, T. E. Pryce, H. A. Satchell, A. Saxon Snell, A. W. Tanner, Thomas Henry Watson, W. Henry White, R. S. Wilkinson, and Edmund Woodthorpe, M.A.Oxon.

Science: Messrs. Max Clarke, Bernard Dicksee, William Dunn, F. R. Farrow, Matt. Garbutt, F. W. Hamiltor, E. R. Hewitt, Francis Hooper, George Hornblower, William Jacques, George Pearson, Lewis Solomon, H. D. Searles-Wood, A. Saxon Snell, Benjamin Tabberer, and A. W. Tanner.

The following candidates for membership were elected:—

As *Fellows:* Messrs.—
Adshead, S. D., London.
Atkinson, R. F., London.
Beswick, H., Chester.
Briggs, J. P., London.
Brown, G. T., Sunderland.
Conder, R. T., Buenos Aires
Conder, E. L., Buenos Aires
Corlette, H. C., London.
Cox, Alfred, London.
Dunn, J. B., Edinburgh.
Evans, R., Jun., Nottingham.
Gilliland, W. J., Belfast.
Goldsmith, F. T. W., London.
Gosling, E. J., London.
Heazell, A. E., Nottingham.
Hills, O. C., London.
Hudson, J., London.
Hunt, J., London.
Hussell, A. T., Ilfracombe.
Lucas, R. M., Southampton.
Marks, F. W., London.
Martindale, J. H., Carlisle.
Moxham, G., Swansea.
Nicholson, Sir C., Bart., M.A., Oxon., London.
Peel, F. W., Chiswick.
Perkin, J. C., London.
Pywell, W., Hanwell, W.
Rew, C. H., Great Berkhamsted.
Robinson, P., Chapel Allerton, Leeds.
Sadgrove, E. J., London.
Sladdin, T. A., Cape Town.
Smith, F. A., London.
Smith, Pro. R. E., London.
Teather, H., Cardiff.
Wallen, F., London.
Williamson, W., Kirkcaldy.
Woodward, W., London.
Yeates, A. B., London.

As *Associate:* Mr. C. T. Palmer, Stamford-hill, N.

As *Hon. Associates:* Mr. E. A. Abbey, R.A., LL.D., F.S.A.; and Mr. W. Goscombe John, A.R.A., London.

As *Hon. Corresponding Members:* Señor Don José Urioste Y Velada, of Madrid; and Henri Paul Nénot, Architècte de la Sorbonne, Président de la Société Centrale des Architectes Français, Membre de l'Institut, Commandeur de la Légion d'Honneur, Paris.

Regulations for Architectural Competitions.

The following regulations were agreed to after discussion:—

If the promoters of an intended competition desire members of the Royal Institute of British Architects to take part therein, the conditions should be based on the following suggestions:—

1. The promoters of an intended competition should, as their first step, appoint one or more professional assessors, architects of established reputation, whose appointment should be published in the original advertisements and instructions. The selection of an assessor should be made with the greatest possible care, as the successful result of the competition will depend very largely upon his experience and ability.

The President of the Royal Institute of British Architects is always prepared to act as honorary adviser to promoters in their appointment of assessors.

All the designs sent in should be submitted to the assessors.

2. The duty of assessors should be, after conference with the promoters:—

(*a*) To draw up the particulars, conditions, and suggestions in accordance with these regulations set forth as instructions to competitors, such documents to be so drawn up as to form an agreement between the promoters and the competitors, and also to advise the promoters upon

the question of cost and the amount and apportionment of the premium or premiums.

(*b*) To determine whether the designs conform to the instructions, and to exclude any which do not.

(*c*) To advise the promoters on the relative merits of the designs admitted to the competition, and to make a selection in accordance with the instructions.

Note.—It is essential in drawing up the instructions to state definitely which of the conditions must be strictly adhered to, and which are merely optional or of a suggestive character.

3. No promoter of a competition, and no assessor engaged upon it, nor any employee of either, should compete, or act as architect, for the proposed work.

4. The number, scale, and method of finishing of the required drawings should be distinctly set forth, and they should not be more in number, or to a larger scale, than necessary to clearly explain the design, and such drawings should be uniform in size, number, mode of colouring, and mounting. If the assessor advises that perspective drawings are desirable, it should be so stated.

5. Competitions should be conducted in one of the following ways :—

(*a*) By advertisement, inviting architects willing to compete for the intended work to send in designs. The promoters, with the advice of the assessor or assessors, should make their selection from such designs. The author of the design awarded the first place should be employed to carry out the work.

(*b*) By advertisement, inviting architects willing to compete for the intended work to send in their names by a given day ; with such other information as the candidate may think likely to advance his claim to be admitted to the competition. From these names the promoters, with the advice of the assessor or assessors, should select a limited number to compete, and each competitor thus selected should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

(*c*) By personal invitation to a limited number of selected architects, to join in a competition for the intended work. Each competitor should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

6. No design should bear any motto, device, or distinguishing mark; but all designs should be numbered by the promoters in order of receipt. Any attempt to influence the decision of the promoters, or of the assessor or assessors, should disqualify a competitor.

7. The author of the design placed first by the assessor or assessors should be employed to carry out the work, and he should be paid in accordance with the schedule of charges sanctioned and published by the Royal Institute. If no instructions are given to him to proceed within twelve months from the date of selection, or if the proposed works are abandoned by the promoters, then the selected architect should receive payment for his services in connexion with the preparation of the competition drawings of a sum equal to 1½ per cent. on the amount of the estimated expenditure.

8. In every case the amount of premium or remuneration for the competitive designs should be fixed under the advice of the assessor or assessors.

9. Where a deposit is required for supplying the instructions, it should be returned on the receipt of a *bona fide* design ; or if the applicant declines to compete and returns the said instructions, within a month after the receipt of replies to competitor's questions. The deposit required should not exceed the sum of one guinea.

10. Each design should be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his own supervision.

11. A design should be excluded from a competition

(*a*) If sent in after the period named (accidents in transit excepted) ;

(*b*) if it does not substantially give the accommodation asked for ;

(*c*) if it exceeds the limits of site as shown on the plan issued by the promoters, the figured dimensions on which should be adhered to ;

(*d*) if the assessor or assessors should determine that its probable cost will exceed by 10 per cent. the outlay stated in the instructions, or the estimate of the competitor should no outlay be stated. If the assessor or assessors be of opinion that the outlay stated in the instructions is inadequate, he or they should not be bound in the selection of a design by the amount named in such instructions, but the question of cost shall nevertheless be a material element in the consideration of the award ;

(*e*) if any of the other instructions are violated.

12. It is desirable that all designs and reports submitted in a competition, except any excluded under clause 11, should, with the consent of their authors, be publicly exhibited after the award has been made, which award should be published at the time of exhibition. At the close of the exhibition all the designs, with the exception of the one placed first, should be returned, carriage paid, to their authors.

13. It is essential to the success of any competition that the promoters should agree in their instructions that the award of the assessor should be adhered to unless there is some valid objection to the employment of the author of the design placed first, as to which the assessor should be satisfied.

14. In the case of works of inconsiderable magnitude it is desirable that three assessors should be appointed. As stated above, the President of the Institute is always ready to advise on this or other points.

Mr. Horace T. Bonner moved—"That in the event of the President or Council being applied to by promoters of competitions to nominate competing architects, notice of such application shall be published in the *Journal*, and members of the R.I.B.A. who are willing to take part in such competitions be invited to send in their names for selection by ballot as competitors."

After discussion the motion was negatived.

NOTES AND SKETCHES IN SOUTHERN ITALY.—XI.

MOLFETTA AND TROJA.

MOLFETTA was the principal city of Puglia Peucetia, the district now known as the Terra di Bari. It stands on a peninsula, with a modern suburb joining the old town to the railway station, having the sea on north, west, and east. It is only three miles from Giovenazzo. Its foundation is of course ascribed to Trojan heroes, and greater antiquity is claimed for it than for Rome by its historians. A Greek city, as is proved by vases and arms which have been found in tombs, it had to submit to the Romans after the Samnite war, *in which it had been on the Roman side*, not being allowed to withdraw from the connexion. It suffered like the rest of Italy from barbarian incursions, but was restored by Roman refugees, who gave it the name of Melfitto, "because life was like honey there compared with what they had gone through." The confusion between the three Melfis in the chronicles allows of the same story being told of the founding, or refounding, of Molfetta, Melfi, and Amalfi. Lombardi, the historian of Molfetta, gives this detail from Rubeo, and makes a point of Melfi not being a seaport, and therefore could not be a place at which refugees from Dalmatia would arrive. The original name appears to have been Chahalfetus, the bishop appearing in the Vatican register as "Epis: Chahalfetanus." It was under Byzantine rule in the XIth century, and was besieged by Bohemond and Roger, the former of whom left the siege to go to the Crusades. The earliest bishop whose monument still exists in the cathedral is Riccardo, who died just after Charles of Anjou's victory over Conradino, August, 1271. The city was consistently faithful to the Angevins. It was given to Amelio del Balzo by Robert III., son of Charles II. of Anjou, together with Bari, Giovenazzo, Trani, Gioja, and Bisceglie. In 1484 Innocent VIII. (Cibo), who had been bishop of Molfetta for nearly eleven years, was elected Pope. Five years later he freed the city from the jurisdiction of the archbishop of Bari and put it directly under the Holy See. Together with the bull, he sent to the bishop a white horse without a bit, as symbolic of the taking away of the ancient bridle. It remained thus free till 1551, when it again had to submit to Bari. In 1515 the chronicler relates that the walls were restored and the port and streets *cleaned*. Before this the Emperor Frederick II. wrote a sarcastic distich upon it, and the city still has a bad repute for its filth. In 1522 it was given by Charles V. to Ferrante of Capua, Duke of Termoli; it then lost the title of "royal city," and the municipal liberties were extinguished. Shortly after it was sacked by Lautrec. It has now some 25,000 inhabitants, still retains part of its walls, gates, and great towers of defence, and is of some importance as being the outlet for the produce of Terlizzi, Ruvo, Bitonto, Palo, and even of Giovenazzo and Bisceglie. In 1835 Giovenazzo and Terlizzi were united to its bishopric, but the bishop's seat was moved to the XVIIIth century Jesuit church after the expulsion of that order, and the ancient cathedral is now little thought of.

It is, however, an exceedingly interesting building (Fig. 1), bearing much resemblance to the Byzantine churches of the IXth and Xth centuries—in plan a Greek cross with three cupolas over the nave, and with the aisles vaulted with a half wagon vault as at S. Francesco, Trani. The central cupola is the highest. It and the lower one to the west are octagonal externally, the eastern one appearing square, the two latter being hemispherical in the interior. The date of its foundation is not recorded, but the eastern façade is arranged in the same manner as the Barese churches, with similar

Fig. 1. *Cathedral of Molfetta.*

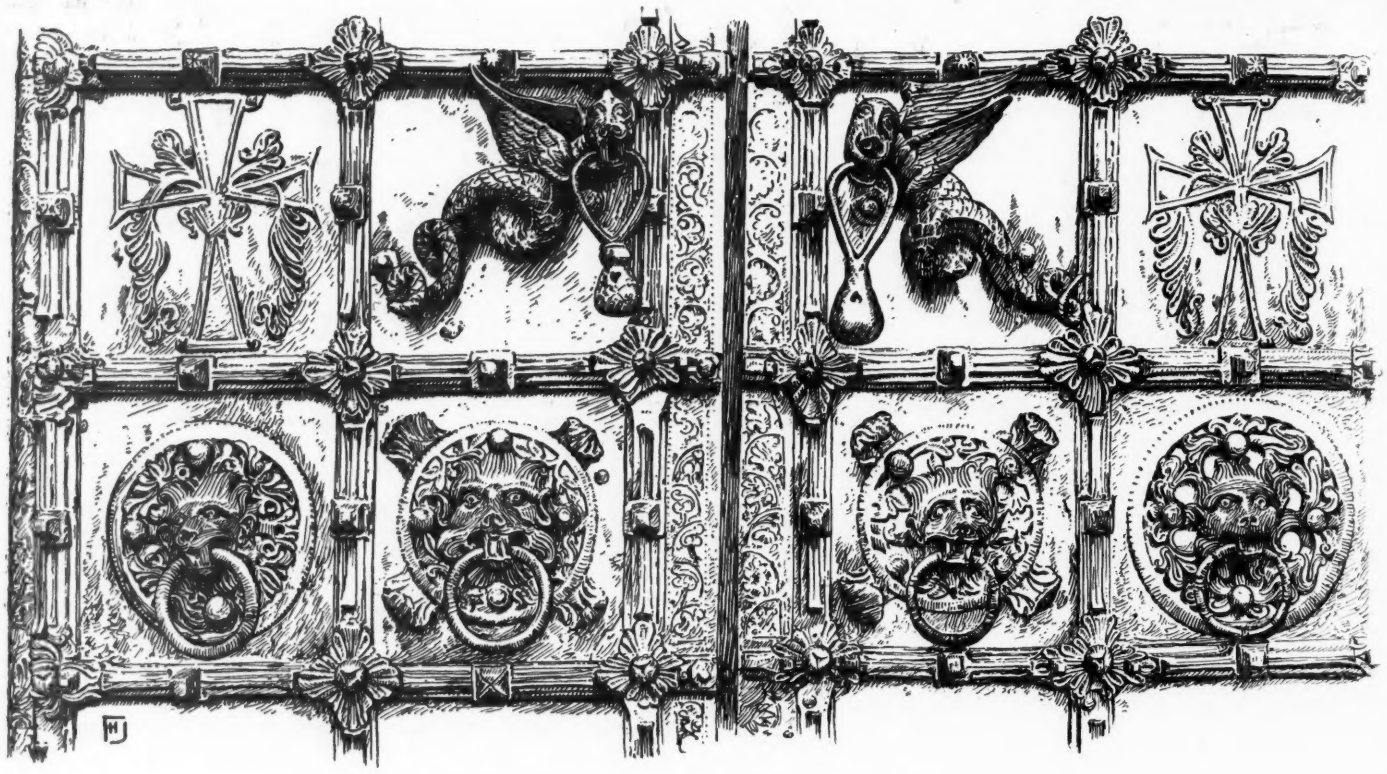

Fig. 2. Part of West Doors of Cathedral, Troja.

details, and it is probably a building of the XIIth century. It was dedicated to the Virgin and later to S. Conrad, whose relics were preserved within. The original rose window still exists on the west front, but the entrance has been destroyed by a later chapel. The whole western façade was walled up in 1670 to preserve the church from incursions of the sea, which washes the north side. The east end has a simply decorated window (with lions at the sides and rather Oriental enrichments in places) in the wall between the towers, and interlaced flat arcading supported alternately on pilasters and corbels. Beneath the window the interlacing stops and the arcading drops to a lower level, with a moulding above at the height of the springing of the other arches. A similar interlaced arcade may be traced on the side next the sea. The windows in the towers resemble those at Trani. The first story has a blank tall arch in one and in the other a two-light lintelled window with a low-gabled tympanum above a central colonnette. The second story has a high arched sinking with a two-light pointed window with a central column, a cinquefoiled head, and a diamond piercing in the tympanum. The third has a two-light round-headed window in a recess, the upper edge of which is formed by a corbel-table of four round arches beneath another of six, above which is an ornamental frieze, terminating with a projecting cornice. There were inscriptions on them; all that is legible now is "*B. Turris sacros ante annos.*" The western end and the sides of the western part of the nave have chapels round them, some of the XIVth century and some later. There is a narrow stair of approach, but the usual entrance is through the sacristy. Three XVth century windows above one of the doors were the gift of Innocent VIII. The cupolas spring from great piers with richly-carved caps, the re-entering angles running up plain to the abacus moulding, which is generally carved. Sometimes figures and heads appear among the foliage. The aisles have small, round arches behind the piers thrown across to corbels in the outer wall, and a wall above them to the height of the vault. The choir was once on a higher level than the nave, as is shown by the piers on which the columns stand in this part of the church, and by little windows behind and at the sides, which once lighted the crypt. This had to be filled up owing to the infiltration of sea-water. A Byzantine-looking relief is encrusted in the pier, representing Christ and the Apostles, perhaps part of the choir enclosure, and portions of the XIIIth century choir stalls are preserved, carved with great vigour. In the chapel to the north of the apse is an ancient picture in which the donor kneels with raised hands before the Madonna, who is suckling Christ. Angels hold a curtain behind and SS. Paul and James stand at the sides. The next chapel has ribbed vaulting springing from corbels, and a band of ornament round the window. The chapel of S. Julian, which has a round window in the gable beneath ramping corbelled arches (externally) seems to be at least as old as the main building, which shows by the interruption of the arcades of the south wall that it was built at two periods. The bay before the apse has pendentives with a projecting moulding, and corbels of grotesque heads; in the wall above the keystones of the arches are shapeless angels, and a carved band runs round the base of the dome. The central dome has squinches. M. Bertaux, the latest writer on the art of Southern Italy, thinks that the Apulian domed churches are imitations of Byzantine models by Italian craftsmen—S. Andrea, Trani, S. Margherita, Bisceglie, and S. Pietro di Balsignano are evidently such copies or adaptations. He bases his opinion on facts of construction for which Sig. Bernich, who has superintended many of the restorations, vouches and believes that the "trulli"—the rude stone circular buildings which are so frequent in Apulian vineyards and olive groves—are the real fathers of these domes, for the joints of the courses are not normal to the curve but horizontal—a construction traditional from prehistoric times (I believe that some of the Byzantine domes were built in this manner, however). These domes at Molfetta are constructed of a series of horizontal rings gradually narrowing, and the cupola of the cathedral of Bari is so also.

The other interesting church at Molfetta is S. Maria dei Martiri, which was erected between 1156 and 1162 in the cemetery of the two hospitals built by Roger, fifth Count of Apulia, to shelter crusaders and pilgrims going to or returning from the Holy Land by way of Brindisi and Otranto. It lies on the coast about a mile from the city. The foundation-stone was laid by request of Roger, archdeacon and vicar of the Molfetta bishopric, by Urrone, Bishop of Ruvo. The archdeacon and Sifando, advocate of the cathedral, gave two olive-yards to the church, which it still possessed 600 years later. William II. granted it protection by a diploma of 1174. It was then a square chapel, with pointed arches, upon which flat octagonal cupolas pierced with little windows rested, divided from the lower portion by a simple moulding. The nave has been rebuilt of late years, and calls for no remark, but the domed portion and the apse behind are interesting. In the crypt a copy of the Holy Sepulchre was made in 1500. The founder, Bernardino Lepore, brought with him from Syria sixty-two stones from holy places with which to construct it. Here there is a Byzantine-like image of the Virgin of the XIIIth century. A holy picture brought from Syria in 1188 is taken by water to Molfetta every year, where it stays for a time, and then is brought back with great pomp. In the cloister outside is an ancient ciborium with an inscription on its architrave giving the date 1419. The shapes of the piercings of the upper part make this possible, though it looks earlier, but the caps and columns which support it are certainly more ancient. M. Bertaux thinks it came from the cathedral.

The town of Troja was founded by the Greek prefect Bugianus as a bulwark against the Lombard power. Leo of Ostia gives the date of 1022, and the inscription on the bronze doors of 1127 says, "108 years from its foundation," which makes the date 1019, but it seems probable that its real date is somewhat earlier, since it was certainly besieged for three months in 1022 by the Emperor Henry II. The Amalfitan chronicler says it occupies the site of the ancient city of Æclana. After pillaging the town in 1060, Robert Guiscard began building a strong castle there, but lost it again twenty-two years later. It was sacked several times before Frederick II. levelled its walls in 1233, and it was again fortified and was a strong place during the wars between Alfonso and Ferdinand of Aragon. The inhabitants came forth in procession with the Host and reliquaries in the endeavour to soften the hearts of the besiegers twice. With Henry II. the expedient answered, with King Roger in 1128 it was not so successful. The town crests a hill of some size, six miles from a railway station, and though the walls no longer exist, it is evident that it must have been a very strong place before the invention of gunpowder. The bishops had rule over Foggia and all its churches, and the later occupants of the see spent much of their time in that city because the climate was pleasanter, and so Troja became of little importance. Under John XIX. (1024-33) the bishopric was made directly subsidiary to the Holy See, the Pope sending the relics of forty martyrs as well as those of SS. Sergius, Bacchus, and Sebastian to the cathedral. The bull is engraved on a stone in the wall. Three councils were held in Troja—one under Urban II., in March, 1093, at which fifty-five bishops and twelve abbots were present; the second under Paschal II., in 1115, principally with reference to the Truce of God; the third under Honorius II., in November, 1127, when King Roger was excommunicated.

The present cathedral (which is dedicated to S. Maria Assunta) was commenced in 1093 under Bishop Gerard, but one must have existed already one would think, for the Amalfitan chronicler says that Robert Guiscard brought to Troja from Palermo, as signs of

victory in 1073, iron doors and many marble pillars with capitals. The greater part of the building was done by Bishop William II., Bigoctus, after a fire which took place in 1097, and it was nearly finished in 1105, when he brought thither many relics of saints. The celebrated bronze doors are of his time, and are dated 1119 and 1127. He was a warlike prelate, and attacked William of Hauteville for molesting pilgrims to Jerusalem, burnt his castle, and took him prisoner. The bronze doors (Fig. 2) are in the western façade, and on the south side. They have considerable Byzantine character. Most of the inlaid heads and hands have fallen out, and where they remain they are of a reddish metal, cast, but they were probably silvered. On the left side, at the top of the western doors, are two figures together in the first panel, Oderisius and Berardus. The second has Christ enthroned on the rainbow, with a cruciferous nimbus; his right hand is raised, the left holds a book. The third panel has Bishop William with a crozier, and the fourth SS. Peter and Paul, one with a triple and the other with a double nimbus. The second and fifth rows have eight heads of beasts, different in size and design, projecting considerably, and supposed to represent lions, but with noses well turned up, and showing also elements of other animal forms. The third row bears coats-of-arms referring to the restoration of 1573. The fourth has two crosses, with leafwork springing from them in the external panels and two dragons of wonderful technique with door-knockers in their mouths. The crosses are very Byzantine in design, showing great affinity with those of the doors of S. Sophia, Constantinople. The sixth row has XVIIth century bishops, and the seventh bears the inscription which gives Bishop William II.'s name and the date 1119. The door on the south side has the top row of panels somewhat similarly arranged. The first has an illegible inscription, the second Bishop William, with a tower before him, the right hand blessing and the left holding his crozier. In the third and fourth panels are SS. Peter and Paul. The next row gives four bishops "Gualterius, Girardus, Ubbertus," and "Guilielmus." Then four more bishops—Orianus with an ancient mitre, the first bishop of Troja; Angelus, Joannes, and Stephanus, the second, third, and fourth bishops. Stephanus also has an ancient mitre, all are in the same attitude as Bishop William. The outlines are finely drawn and filled with a red mastic; faces, hand, and feet have fallen out. They all have nimbi. A row of four lions' heads comes next, very much like those of the western doors, the only portions in relief, and the two rows beneath them bear a long inscription, giving the names of Bishop William II., and of Oderisius of Beneventum, who made the doors, and the date 1127. The lower part of the walls (Fig. 3) has external arcading in the Pisan manner, above which is a strongly carved frieze. The arches are often horseshoe in shape, the voussoirs are yellowish, and greenish stones are used to make the ornament (either in the construction or inlaid), which is very elaborate in some parts, as at Caserta Vecchia, while the general construction is of grey tufa. On the architrave over the west door are rough sculptures. In the middle is Christ enthroned, blessing with the right hand and holding a book in the left; on both sides are candlesticks; on one side stands the Virgin, and on the other S. Peter in prayer, beyond on each side are two symbols of the Evangelists in entwined medallions, and then two bishops with croziers, blessing, at each end; those on the right are SS. Eleutherius and Secundinus. The carving is a good deal like Beneventan work.

Above the frieze a lion on each side, with an amazingly sentimental expression, bears on his back a slab on which two shafts stand coupled. On one side one is of porphyry and the rest are cipollino. A round arch starts from their caps with heavily-carved archivolt, but there are traces of a pointed arch below it. Lions, a bear, and an ox spring from the wall at the sides. Under this arch is the elaborate rose window. The radiating colonnettes of it are mostly white marble, but one is of Breccia and two others veined and spotted, while one is quite dark. The spandril triangles outside the trefoiled arches (which interlace) are green and white inlaid in various patterns; the filling of the lights is of sheet-lead, with variously shaped piercings. On the north side are some fine carved roundels with birds, etc., on them and inlays round. The eastern rose has rough tracery built of brick. The tympanum of the side door on the north side shows Christ treading on the lion and the dragon, blessing with the right hand and holding the book of life in the left. Angels on each side of him bend down and fit into the arch. The work is not so good as at Trani and Bari and again suggests Benevento. The lower portion of the western part of the church probably dates from 1069-83. The apse and the crossing are later, due to Bishop William (1179), and the upper portion of the south side has an arcade which finishes with a half arch butting against the wall of the crossing. Later alterations are also evident. The apse bears great resemblance to some of the Syrian churches of the VIth century, but is partly hidden by later buildings. It has fine bold arches with roughly and vigorously cut caps of foliage and lions' heads and two series of columns, one above the other. The angle piers terminate with simple mouldings beneath a corbelled cornice. The walls are some 3 ft. thick. The pillars all have a strong entasis and are made up to the proper height with additions. This suggests their being antique. Two lions prowl by the window above the lower row of shafts which have high bases. A deep cornice carved with leaves separates the two orders of four columns each.

Each side of the nave has six high granite shafts, which may be some of those brought by Robert Guiscard or may have come from the ancient Æclana, which was near, the last on the right being a coupled pair, a curious irregularity. In several cases they are made up to the right height by the addition of pieces either at the top or bottom. Their chamfered pedestals are so large that two pieces of marble are used for them. On some of them are little lions' heads. The caps are based on Corinthian and are carved with leaves and heads of beasts, among which one may see men's heads of an African type. They vary enormously in height, the deepest being quite twice the height of the shallowest. They are none of them antique; their abaci are unmoulded. The slightly later piers at the crossing have caps with sharply-cut foliage. The side aisles and the choir are vaulted with a pointed vault. The nave and transept have flat roofs, though the left arm has pendentives in preparation for a dome. On the piers of the crossing on one side are the four apocalyptic beasts, very Byzantine in feeling, on the other an angel with a book in the corresponding place. The nave is unusually high, the tribune arch is round, but becomes pointed on the extrados, and there are some horseshoe arches on the exterior. The interior has been restored and beautified. Painted figures of the Apostles are in vesicas above the six columns with little scroll things as corbels below them. Some detestable blue glass modifies the whole interior with its colour. In the treasury are three ivory coffrets, two rectangular and one cylindrical, decorated with Cufic characters and paintings and with bronze feet. Perhaps Lucera work, or imitations of such work by Italians? The ambo of 1169, which was brought from S. Basilio, is rectangular, and rests on four shafts with high bases and spreading caps of Byzantine acanthus; the projecting parts have once been gilded and the other parts painted green. The faces above are divided into panels enclosed in broad bands or borders of ornament based on the vine. The front panel is plain with a colonnette in the centre supporting an eagle with outspread wings and book-rest. He holds a beast in his claws and stands on a man's head, which rests on the cap of the colonnette. One of the side panels has a Byzantine-looking lion with great eyes, which grips a sheep, surrounded with sharply-cut foliage. Behind the lion is another of smaller size. The other panel also is carved and the whole crowned with a rich cornice on two sides, which has traces of red on the ground. The meandering of the vine is rather sudden in its twistings, and the bunches of grapes lie sideways, as if this piece of the carving had originally been fixed in a perpendicular position. The sculptures are in a grey-green tufa, the rest yellow limestone. The Pisans had an establishment at Bovino, a few miles away, and some of the French archæologists assume that the cathedral at Troja is either a direct copy of a Pisan church or built by a Pisan architect. It appears more probable that the inspiration was Byzantine for both the Pisan churches and those in Apulia which show the same characteristics, the more so that many of them appear in the beginning of the XIth century in the churches built at Ani in Armenia under the Bagratid Dynasty, where Pisan influence is impossible; which also show examples of the constructional use of the pointed arch and piers of a developed type usually associated with the Gothic of a much later period. The resemblance to the cathedral of Foggia, especially in the carving, is so great that it seems probable that the upper part of the façade

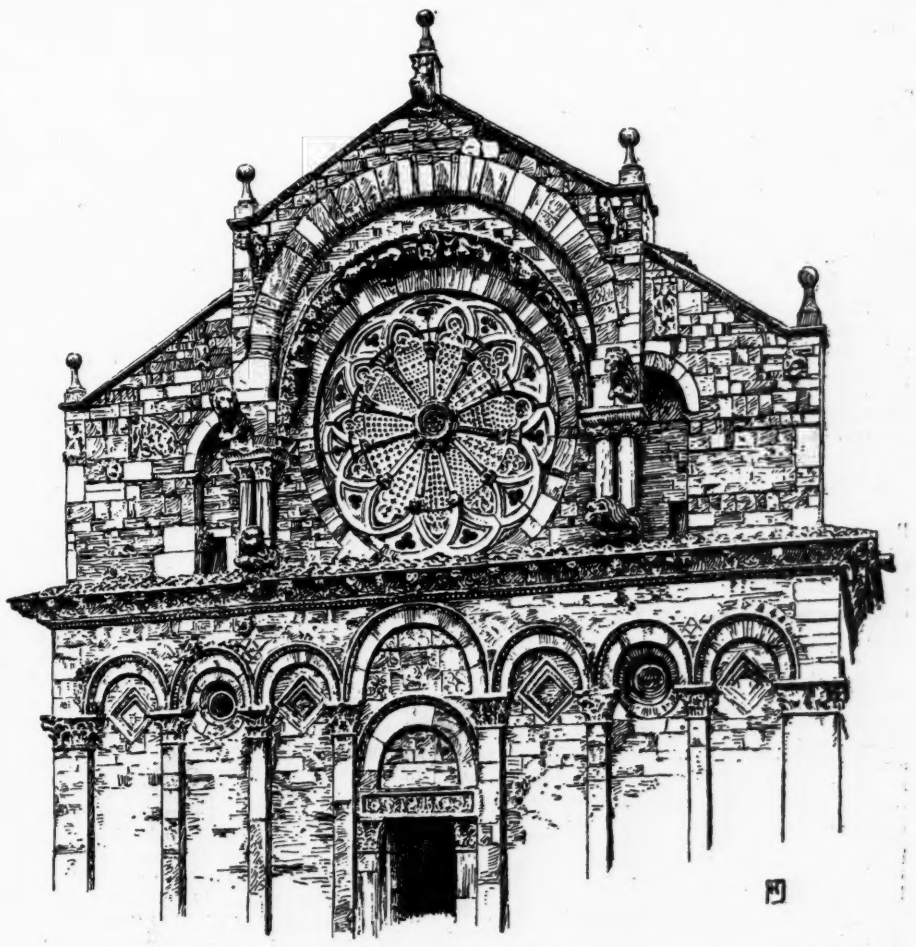

Fig. 3. Façade of Cathedral, Troja.

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and the dividing cornice are the work of the same hands in both buildings, which may be assumed to date from the latter part of the XIIth century.

S. Basilio is believed to be the oldest church in Troja, having been built soon after the founding of the town. It is a Latin cross in plan, with a little apse. The north arm of the cross was taken for a sacristy, the aisle wall being continued across it, and above this portion is an ancient tower with two bell openings slightly pointed; over the crossing is a cupola with four little windows and a pointed roof. The nave of four bays is lofty and has two windows on each side (over the second and fourth arches), as have the aisles. The arches are round and unmoulded, except those opening from the aisles into the transept, which are pointed. The aisles are vaulted with a wagon vault, but plastered and painted to imitate cross-vaulting, and the nave has cross vaults resting on corbels. The columns are made up of several pieces, and some of the simple caps have two rows of leaves. Round arches span the transept (which is raised one step above the nave) to the sides of the apse.

The façade is simple and almost undecorated. There is one window above a door with a stilted arch. The arch is of yellow stone, the tympanum green. On the left side is a little door with an arch of white stone and an architrave formed of a piece of antique carving, which is also white; the tympanum is again green. Round the apse are four slender half columns with caps of foliage; between each pair are ten corbelled arches. The font has an arcading round the bowl with shallow sinkings by the dividing ribs and is supported on a section of a column.

The "municipio" opposite the cathedral at the angle of the piazza has the lower portion panelled in stone, work of the period of the Early Renaissance, and a mass of solid masonry projects some distance beyond the panelling below it. A few Roman inscriptions are built into the wall of the post-office on the side of the Vico Ospedale. Troja is so highly placed that in bad weather it is in the clouds, and the summit of the XVIIth century campanile was often hidden by the drifting mists during the time I was in the city. F. H. J.

MAGAZINES AND REVIEWS.

THE *Art Journal* commences with a review of the Royal Academy by Mr. A. C. R. Carter, which is a happy variation from the fashionable habit of the typical art-critic of the day, of sneering at the Academy. Mr. Carter says, and truly:—"There never was an Academy exhibition without some works of promise, of inspiration, and of achievement. It is the business of him to whom the duty falls of writing about an annual display, to search for and find these redeeming features in the huge variety entertainment provided." One wishes that more art-criticism was written in this spirit. With the opinions expressed we feel generally in agreement, though we would have mentioned some things that are omitted. Mr. R. E. D. Sketchley contributes an article on "Buckinghamshire Lace," telling how in this day of hurry and machine-work "lace of pure design and fine quality is being made in many Midland cottages," and giving some beautiful examples, four of which are produced in stamped relief, which gives the exact appearance and texture of the work.

The *Burlington Magazine* contains a short and useful article by Mr. Roger Fry on Tempera painting and its distinctive effects and capabilities as compared with oil. Constantin Meunier is the subject of two articles, one of personal reminiscences, by Professor Petrucci, the other on his aim and place in the art of the XIXth century, by Mr. Charles Ricketts. Meunier is now taken up by the modern art-critics, as a sculptor of humble life, just as Millet was taken up, twenty years ago, as a painter of humble life; in both cases the recognition came too late to benefit the artist much, and in both cases the artist has been exaggerated, as people will find out in another twenty years. Meunier was draughtsman as well as sculptor, and some reproductions of his are given. An article by Sir E. Maunde Thompson on "A Rothschild MS. in the British Museum" is illustrated by reproductions of some most interesting mediæval illustrations to the said MS., which is a French translation from Boccacio's Latin book "De Casibus Virorum et Feminarum Illustrium." Two of the illustrations include architectural subjects, one of them a view of the attack on a château, by troops of course on quite a different scale from that of the buildings, the architectural details of which are nevertheless pretty carefully made out. Mr. Clouston's article (the seventh) on "Minor English Furniture Makers of the Eighteenth Century," deals with the now nearly forgotten name of Shearer, who nevertheless was probably the real author of pieces often attributed to Hepplewhite, with whom he seems ultimately to have been connected. His "horse shoe" dining-table, the plan of which "in repose" (as one may say) is the segment of a circle, but which extends, with unfolding legs, into a complete half circle, is a form of table both picturesque and practical; the guests sat round the outer circumference and were served with great convenience from the inner one, which certainly suggests an economy of labour in waiting. A "screen writing-table," which serves at once as a fire-screen and a writing table, and which is said to be especially and solely Shearer's, is another piece of furniture both practical and elegant; the screen is formed by the upright cupboard just deep enough to contain pigeon-holes for paper, supported on two pairs of widely spread legs; the door enclosing the pigeon-hole portion lets down, with metal holdfasts, to form the writing-desk; the portion below has folding doors with oval mirrors in them; altogether a most interesting device in furniture.

The *Berliner-Architekturwelt* contains illustrations of the building for the "Landesversicherungsanstalt" (the Germans certainly have a genius for coining long words!), which we take to mean "Lands Insurance Institute," at Berlin, by Herr Messel, which has a certain character of a somewhat mechanical kind; the exterior consists of a row of perfectly plain narrow brick piers running from ground line to eaves, with the windows recessed between them, and panels between the head of one window and the sill of the next filled up with symbolical carved hieroglyphic devices. In sharp perspective, as in the first illustration, it looks wretchedly bad, all vertical strips, but as a business building there is a character about it, and some of the detail seems to be good. The Stephanus-Kirche in Prinzen-Allee, Berlin, by Herr Bürckner, is "a mighty mass of brick" with an immense high-pitched roof over it; the interior, with its solid brick piers and mouldings, is more satisfactory than the exterior, which to English eyes seems hard and unsympathetic to a degree. Herr Bruno Schmitz's warehouse building, No. 167, Friedrichstrasse is bold and clever enough in treatment, with its immense mullioned windows, on a segmental plan, filling up the greater part of the height and the balustraded gallery over them; it presents a kind of architectural scheme which, with a different kind of detail, is suggestive for the architectural treatment of a city warehouse. Some interiors of rooms designed by various architects, and forming part of the A. S. Ball exhibition at Berlin (whatever that is), show meritorious suggestions in decorative treatment.

The *Architektonische Rundschau* contains nothing worth special comment, except that it includes illustrations of interiors and exteriors of the new building for the Finance Minister at Stuttgart, which, however, it is impossible to admire. A doctor's house in the Margaretenstrasse, Berlin, designed by Herr Dybwad, of Leipzig, is refined in its classic style, and at all events keeps clear of eccentricity. We may again ask when the so-called "Rundschau" is going to include anything by an English architect.

In the *Antiquary* Captain Purchas writes an article on the Chandos portrait of Shakespeare, in comparison with the Droeshout and other extant portraits. He goes very carefully into differences of detail in these, but only with the result that it is impossible to conclude which comes nearest to being the likeness of Shakespeare. The Chandos is a more pleasing and more intellectual head than the others; on the other hand, they all have a certain general resemblance in the character of the physiognomy, and the Chandos differs from them a good deal. The Stratford bust has the same general character as the majority of the others, but it is a clumsily executed affair, and we may feel pretty sure that Shakespeare's mouth and expression, at all events, were not like that. Mr. Abell continues his interesting article on "The Other End of Watling Street."

The *National Review* contains some "Candid Impressions of England" by "A German Resident," which are a good deal more than candid, being in fact filled with a spirit of hatred and contempt which does not sit very well upon an alien who admits that he has been well treated in England; but which nevertheless had better be read by Englishmen of all professions, to consider how much truth there may be at the bottom of them. There is certainly some, and truth which ought to cause us to reflect seriously. A good many of the subjects touched upon are outside of our special province, but one or two points we may refer to. To quote one passage:

> "Though your workers are now earning high wages, I observe that they do not use their money well. Instead of spending it upon their homes, and paying higher rents, or buying better food, or saving for bad times, it goes too often to the bookmaker or the public-house; and yet you will hear these men complain that they are not provided with better houses by the municipality or by the State. They are allowed to travel on railways at a price which does not pay the companies, by a special law made in favour of their class, yet they seem to think that they ought to pay nothing for their journeys. Perpetually they expect everything to be given to them, and themselves to give nothing. We in Germany long since granted free education, but then we compel our men in return to serve in the army, so that there is no injustice in the arrangement. In England, however, you make one quarter of the State pay for the education of the children of the other three-quarters, as well as for the cost of their own children. You are even getting ready, I see, to feed the children of the poor, and next I suppose you will clothe them as well, winding up by maintaining their parents. In fact, you seem bent upon producing a nation of degenerate paupers, not of sturdy men."

In regard to the administration of our towns, our German critic observes that it is impossible to find out who is responsible for what is done or left undone; "the maximum of money is expended for the minimum of effect by a host of jarring authorities." Is not this too true? "In Germany the administration of our towns is regarded as a matter of business and not as a matter of politics. . . . We have an expert, salaried and responsible, at the head of our towns, instead of your extraordinary collection of elected authorities, so that we know whom to blame if matters go wrong." Then he touches on a point we have often referred to—municipal debt. "The first principle of sound business is sound accountancy; but in your towns, with their 450,000,000*l.* of debt, you have not even got that." The writer speaks with respect of our management of India; but that, he says, is because we send our best and strongest men there, but we do not allow the best and strongest to rule at home. Is there not also too much truth in that? The writer is insolent and offensive in his tone as only a German, perhaps, can be; but it may be worth while to take account of what he says. It seems a pity, however, that the Germans cannot have an equally "candid" lesson in one of their own magazines, on their own shortcomings as viewed with English eyes; but that is out of the question, for no decent English writer would have the bad taste and ill manners to write in such a strain about Germany in a German publication. One wonders what would be said of him in Germany if he did!

Temple Bar contains a thoughtful article by Mr. Benjamin Taylor on "The Housing Question," taking the line that this is not a subject for a municipal but for private enterprise. A municipality builds under certain restrictions, written or understood, and does not provide for the poorest class. A private builder can provide for either a millionaire or a scavenger. Then the law says "that the municipality must re-house all the people it unhouses when a slum is demolished, but then the demolished slum is always, or nearly always, very much more populated—overcrowded—than the new buildings are allowed to be. The excess must go somewhere else, but the law does not say who and what the excess is. In point of fact, a municipality does not and cannot re-house more than a fraction of the people it displaces." And in regard to the lowest class, the vicious class, the opinion of Mr. Fyfe, the chief sanitary inspector of Glasgow, is quoted that it was useless to build houses where such people could dwell as citizens, with citizens' rights and privileges:—

> "His solution of the problem was to place all vicious, incorrigible, and known non-rent-paying persons in reformatories, or working colonies, where work must be done; that they should be kept there until a commission is satisfied there is a reasonable prospect that reformation has set in; that the cost of these reformatories should be partially maintained by government and partially by the communities utilising them; and that the dens which these persons at present inhabit should be, if found insanitary, closed against human habitation, or made sanitary and wholesome for corrigible, decent citizens. If government were not prepared to grant these powers, and pay part of the cost, then he saw no other reasonable way of dealing with these people than by closing the slums they at present inhabit, and

asking all proprietors to co-operate with the municipal authorities to make it extremely difficult, if not impossible, for them to retain a footing in the city."

Mr. Taylor adds that "the more one thinks of this view of the treatment of the worthless and shiftless unit of the population the more right and rational it seems."

The *Revue des Deux Mondes* contains a very interesting and thoughtful article by the eminent French critic M. Robert de la Sizeranne, on "La Geste Moderne aux Salons de 1905." It is written more especially in relation to the French sculpture of the year, and is an attempt to suggest a possible modern element in the manner of regarding and treating the human form in sculpture. This is at all events a serious and thoughtful article, and well worth the attention both of artists and art-critics.

The *Century* contains several articles of interest to our readers. Mr. Gilbert H. Grosvenor, under the title "Our Heralds of Cloud and Storm," gives an account of the service methods and some of the experiences of the United States Weather Bureau. Inhabitants of the States have some not infrequent experiences which we never have in England; they know, for instance, what a tornado is, a knowledge from which we may be thankful to be preserved. A West Indian hurricane may have a diameter of from 100 to 500 miles; a tornado is measured in feet, and may be from 100 to 1,000 ft. across, but against its power, within its range, forests and brick walls are helpless. Some of the photographed examples of the work of tornadoes seem almost incredible. Mr. Whiteing continues his essay on French châteaux, with illustrations of Amboise, Blois, and Cheverny. There is a clever restored picture by Mr. Castaigne of the celebrated staircase at Blois occupied by figures of the time of Henri III. Mr. Welch's article on "The Piercing of the Simplon" is a more practical and scientific one than we usually find in a general magazine, and includes a geological section of the country through which the tunnel was pierced, showing what a variety of different stratifications had to be encountered. Illustrations are given of some of the mural paintings by an American lady artist, Miss Violet Oakley, for decoration of the new Pennsylvania State Capitol at Harrisburg. They deal principally with the history of Tyndal and his Bible, and appear, as far as can be judged from black and white reproductions, to be fine works, in which the decorative and dramatic elements are well combined. Their colour scheme is said to be very good.

In the *Pall Mall Magazine* Mr. Lewis Hind, in an article entitled "Pictures and the Public," gives a very amusing account, which reads as if it were real, of taking a young City man, who professed no knowledge of art, through the permanent collection at the Guildhall, in order to record his impressions and opinions, some of which are delightfully naïve. Mr. La Thangue did not please him; "he could not stand that sunlight on the man's arm for five minutes" (is it possible that there is something in this criticism?); nor Mr. Arnesby Brown—"there never were cows that colour, and there never was grass that colour"; "these fellows want to improve on nature." One would suppose that Mr. Hind's friend was a thorough-paced "realist," but for the fact that he settled down on Constable, of all people, as the painter who most satisfied him. The policeman on duty also thought Constable's "Showery Weather" very fine, and never got tired of looking at it. But then he on his part thought anybody could appreciate Mr. La Thangue or Mr. Arnesby Brown, "but," he added confidentially, "it isn't everybody who can appreciate Constable." If the account is real fact, it is very interesting; it all depends on that. The same magazine also unfortunately contains a silly page of what can only be characterised by the vulgar expression "gush" in regard to that much over-rated wax statue of "Lycidas," which has risen into an undeserved fame through the mere fact of its refusal by the Royal Academy; the kind of article which is accepted by editors of popular magazines because it echoes a foolish and popular cry.

The *Gentleman's Magazine* contains a historical sketch of "The Ward of Vintry," lying between Cannon-street and the Thames, and described as "one of the most interesting of the wards of London, not only on account of its buildings, but because of its rich fund of associations with the past." Mr. MacMichael's important serial article on "Charing Cross and its Immediate Neighbourhood," which aims at collecting the history and associations of this part of London, has now reached its sixth number, and will we hope eventually appear as a separate publication. Under the title "An African Pompeii" a short description is given of the remains of Timegad. Dr. Japp's article on "Mottoes of Noble Houses" touches on a subject of considerable archæological interest.

In *Knowledge* those who are interested in the present tentative efforts at the manufacture of flying-machines will find an interesting description and illustrations of "a bird-like flying-machine," propelled by wings on the same principle and somewhat in the same shape as a bird's wings. The small model of the machine has flown, it appears; whether the large one will is yet to be seen. We doubt if it will fly far, but the experiment may prove a step in advance.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A WESTERN COUNTIES meeting of the Association of Municipal and County Engineers was held at the Guildhall, Gloucester, on Saturday, June 3. The members were received and welcomed by the Mayor (Mr. W. Langley Smith) and the City High Sheriff (Mr. Bretherton). The President (Mr. A. T. Davis, M.Inst.C.E., of Shrewsbury) was in the chair, and there were present Messrs. W. Harpur (Cardiff), T. H. Yabbicom (Bristol), Norman Scorgie (Hackney), T. W. A. Hayward (Battersea), J. S. Pickering (Cheltenham), A. D. Greatorex (West Bromwich), Goodyear (Colchester), J. Parker (Hereford), Cook (Nuneaton), and others.

Municipal Works, Gloucester.

Mr. R. Read, A.M.Inst.C.E., City Surveyor, read a paper on the municipal works of the city of Gloucester. He said Gloucester was the most inland port in England, with docks capable of accommodating vessels up to 1,200 tons register. These docks are connected to those at Sharpness, lower down on the estuary of the Severn, by a ship canal, opened in 1827, 16 miles in length without a lock, the distance by the river being 30 miles. The docks at Sharpness could accommodate vessels up to 6,000 tons register, and a large trade was done both there and at Gloucester in corn and timber, salt, and general cargoes.

There could be no doubt that the ancient city owed its existence to the excellent facilities which the river Severn and the watercourses flowing into it afforded for water supply and navigation, while shallow wells sunk in the gravel deposits over the lower lias clay provided an abundant supply of water. As time went on, and these sources became more or less polluted, water was first brought from the outside, from Robinswood Hill, an outlier of the Cotswold about 2 miles south-east of the city, in lead pipes, and in the XVIIth century pumps were erected on the banks of the Severn near Westgate Bridge, worked by a water-wheel, forcing the river water through wooden pipes formed of young elm trees bored out and cut at the ends to spigot and socket joints, the sockets being strengthened with iron bands.

In 1855 the Robinswood Hill supply was in the hands of a company, who had constructed reservoirs there and laid on the water to some of the principal houses by means of cast-iron mains and lead service pipes, and the demand becoming greater than they could supply, the corporation, on the advice of the late Mr. J. F. Bateman, in that year, obtained an Act of Parliament, purchased the company's rights for 18,000*l.*, and also constructed new additional waterworks at Witcombe, 5 miles east of the city, on an escarpment of the Cotswold Hills, and in 1863 the city was supplied from this source by a 12-in. cast-iron main from two impounding reservoirs, having a total capacity of 80,000,000 gallons. The second or lower reservoir was in 1870 enlarged, and a third reservoir constructed, bringng the total capacity of the three reservoirs up to 120,000,000 gallons, which Mr. J. F. Bateman then advised was the limit of the capacity of the watershed of 1,500 acres in a succession of dry years.

The rainfall of the district varied from 20·37 in. in 1892 to 42·37 in. in 1872, and averaged about 30 in. per annum.

The author was appointed surveyor and water engineer in March, 1878, and in 1881, owing to dry seasons, it became necessary to give an intermittent supply owing to the great increase in the population taking the water.

The population was now 50,500 in 11,498 houses, and the rateable value in March 31, 1905, was 216,928*l.*

In 1882 Mr. J. F. Bateman was again consulted in reference to an additional supply of water, and recommended tunnelling for half a mile into the face of the escarpment of the Cotswold Hills at Witcombe, to bring back water which followed the dip of strata in a south-easterly direction towards the Thames Valley. This ingenious scheme had to be abandoned after trial borings had been made, owing to legal and other difficulties.

In 1883, on the author's recommendation, the Corporation installed the Deacon meter system for the detection of waste of water, at a cost of 2,000*l.* including 20 meters, dividing the city into that number of districts, about 100 additional valves in the distributing mains, and 1,200 outside stop taps to service pipes. The result of the working of the system was that by June, 1884, the consumption of water was reduced from 32 gallons to 16 gallons per head per day, and it was maintained between that and 20 gallons per head per day, on a total population of 55,000, including the outside population supplied.

In 1891, after Mr. Bateman's death, Mr. William Fox, M.Inst.C.E., was consulted, and he, with the author and the late Mr. J. J. Seekings, who was then Mayor, investigated about ten possible schemes for additional water supply, including two from the river Severn, and the one finally adopted, viz., the sinking of a well in the new red sandstone near Newent, 11 miles west of the city.

Accordingly, in January, 1893, a boring with the diamond drill 10 in. diameter was started at Oxenhall, near Newent, and an abundant supply was found which overflowed the surface. The boring was continued by the Corporation to 290 ft., but the landowners, thinking to find coal, arranged with the contractors to continue the boring to a depth of 1,200 ft., but at this depth the bottom of the Bunter bed of the new red sandstone had not been reached, and the boring was then discontinued. The Corporation deposited plans and applied for an Act of Parliament in November, 1893, the only opposition to the scheme being for clauses in reference to wells in the neighbourhood and to the crossing of the river Severn by the 14-in. main carrying the water to Gloucester. The well, which cost 4,586*l.*, was commenced in October, 1894, and sunk 170 ft. into the new red sandstone, 15 ft. diameter for the first 60 ft., which was lined with 14-in. brickwork, and 12-ft. diameter for the next 90 ft., which was lined with cast-iron cylinders 11 ft. diameter inside, in 5 ft. rings of eight segments each.

At 145 ft. depth out of last ring but one headings were driven, one in a northerly direction and the other in a westerly direction.

These largely increased the supply to the well, and the contractors, Messrs. Arthur Timmins & Sons, of Runcorn, had to pump 1,500,000 gallons per day to enable the men to work in the headings. The northern heading was 117 ft., and the western 145 ft. in length.

While the well was being sunk, the 11 miles of 14-in. main was being laid, and the covered service reservoir constructed by Messrs. Cruwys & Hobrough, of Gloucester and Birmingham, the contractors for this part of the work. The reservoir was at Upleadon, 3 miles from the pumping station, 150 ft. above the top of the well, and 250 ft. above O.D., and contained 600,000, gallons; and in 1901 a second reservoir holding 1,250,000 gallons was added to the above by the same contractors, from the author's designs, in concrete. The water was delivered to Gloucester on July 1, 1896. It was raised from the well into tanks under the engine-house floor by lift pumps 14¾ in. diameter, 4 ft. 6 in. stroke, and double-acting force-pumps draw from the tanks and force the water up to the reservoir at Upleadon, from thence it gravitates 8 miles to Gloucester.

The 14-in. main was carried over the western branch of the river Severn on a lattice girder steel bridge, 212 ft. span carried on screw pile abutments, the latter being used to overcome the opposition of the county authorities, who feared damage to the foundations to Telford's beautiful elliptical stone arched bridge which was close by.

The engines, pumps, and boilers, which were capable of raising 30,000 gallons per hour, were constructed and erected by Messrs. Summers & Scott, engineers, of Gloucester, who were now putting in larger pumps in consequence of the severe drought of 1904, necessitating both engines working night and day for three months; the larger pumps would give a stand-by under all conditions of the rainfall which affect

the Witcombe impounding reservoirs. The engines were arranged clear of the well, so that either lift pump could be lifted out with its rising main by simply disconnecting the pump rods from the bell crank lever. The engines, pumps, and boilers cost 5,415*l*. The pumping-station, built in red brick and forest stone dressings, consisting of engine-house, 60 ft. by 30 ft., boiler-house, workshop, etc., cost 3,766*l*. The total cost of the scheme was 45,000*l*.

In 1901 considerable trouble was experienced at the Witcombe reservoirs with the growth of water plants of the Cara and Nitella group. These weeds grow at the bottom of the reservoirs, wherever light penetrates, and at a very rapid rate, especially during the summer months, when the temperature in the air was over 60 degrees F., and at certain stages of their growth they imparted a fishy taste to the water, and although this was in no way injurious to health, it was very unpleasant to the taste and smell, especially when the water was heated. In order to overcome this difficulty, the author installed, in October, 1901, a battery of ten Bell Brothers' mechanical filters, at a cost of 5,000*l*., or about one-quarter of the total which would have been necessary to establish ordinary sand filters at the reservoirs, which would have necessitated a loss of 50 ft. of head in the main going to the city. The Bell filters being continuous in action only created a loss of 2 lb. pressure between the inlet and the outlet of the filter. They consisted of ten steel drums, each containing about seven tons of Leighton Buzzard sand, through which the water was passed. The filters were washed out three times per week by reversing the flow of the water to each cylinder in succession; they could be used with or without chemicals, but from one-tenth to one grain of sulphate of alumina per gallon greatly facilitated the filtration, the result being that the water was sent to the city clear, bright, and in perfect condition. The filters acted both bacteriologically and chemically. Mechanical filters had been in use in America for filtering the water from lakes and rivers from which American towns were supplied. The Bell filter was a very great improvement on the American filters, inasmuch as, in addition to reversing the direction of the water through the filters for cleansing purposes, while this was going on stirring arms were made to revolve by means of an oil engine, shafting and bevel-gearing attached to the outside of the filters, so that it was thoroughly washed by the reverse current of water, and it was this method of stirring up the sand which was the great point in the success of cleaning out the filters, as, without the stirring, the current of water was apt to take a direct course between the inlet and the outlet of the drums, without greatly disturbing the whole of the sand. These filters had now been at work for three and a half years, and had made the Witcombe water potable during the hot months of the year, when, in old times, it had frequently to be shut off from the city.

In 1852, under the powers of the 1848 Act, the city was entirely re-sewered in a very thorough and efficient manner by Messrs. Rammel & Lister, civil engineers, the contractor being Mr. Guest, and provision was made in the sewers then laid down for their future extension to near the present area of the city. They consisted of two main outfall sewers, one draining the northern portion and the other the southern portion of the city, both converging at the city quay, and in 1852 they discharged by a single outfall into the river at 17 ft. above O.D. Each sewer was egg-shaped, 4 ft. 6 in. by 3 ft. diameter, and the outfall was a 30-in. iron pipe until 1886, when the author constructed the new quay wall, 200 yds. in length, and took the opportunity that work afforded to give each sewer a separate outfall, thus giving great relief to the sewers in heavy weather.

They had had to adopt the "Model" by-laws as they stood, including the so-called intercepting trap, which the author had consistently opposed since it was first adopted by the Local Government Board, and as long as this absurd and unscientific obstruction was obliged to be introduced into every house drain so long would the question of the ventilation of sewers be an unsolved problem.

On the extension in 1900 the system was further added to by 6,879 yds. of pipe sewers, ranging from 18 in. to 9 in. diameter, at a cost of 6,000*l*., bringing the total length of sewers in the city up to 41 miles 45 yds. The two large outfall sewers, 4 ft. 6 in. by 3 ft. diameter, had gradients of 1 in 240 and 1 in 480, respectively, for the first 1,000 yds. from the outfall, and the pipe sewers had generally very good gradients, there being an average fall on the surface of the ground of about 30 ft. to the mile. The sewers were all on the combined system, and for some years they suffered from periodical flooding arising from the three natural water-courses which in heavy weather brought a lot of water from the outside area into the city, the Twyver having a gathering ground of 1,593 acres and the Sudbrook 1,963 acres outside the city, and in times of heavy rainfall the covered portions of these brooks through the city were surcharged, and the flood-water overflowed into the sewers, causing great damage and inconvenience. These floods generally occurred at intervals of from five to six years, and on each occasion the surveyor had to report upon the matter and obstructions were removed.

The floods of the river Severn which occasionally occurred were beyond the control of the Corporation, as the river drained an area of 3,700 sq. miles above Gloucester, but they had little or no effect upon the city, as the flooding only takes place in the immediate neighbourhood of the quay, as far as the city itself was concerned, but the two channels of the river became one during a flood, and Alney Island was submerged.

There was a weir in the western channel of the river just below the upper parting at Maisemore, and another in the eastern channel at Llanthony, 900 yds. below the Gloucester quay, and these hold up the water in the eastern channel to its lowest summer level, 20·53 ft., the invert of the sewer outfall being 17 ft. above O.D., or 3 ft. 6 in. below lowest summer level. No nuisance, however, had ever been known to arise from this fact, but the Local Government Board were pressing them to discharge the sewage into the western channel below the weir so as to get a free outfall; the low water-level of the western channel was only 1 ft. lower than the invert of the sewer, and the distance between the two channels was 770 yds., therefore this could only be effected by pumping from 3,000,000 to 6,000,000 gallons of sewage per day, and in time of flood the pumps would be drowned. When the extension of the city in 1900 was granted the Local Government Board made the Corporation promise to consider this question, but they were under no legal liability to carry out the suggestions, as Gloucester was on the tidal portion of the river, and at low water the amount passing over the weir was three hundred times more than the dry weather flow of the sewers.

From the report of the Medical Officer of Health for 1904 the death-rate of the city was 14·8 per thousand, and the zymotic death-rate 1·7 per thousand.

The Corporation depôt, constructed in 1896, on 1½ acres of land belonging to the Corporation, contained stabling for thirty horses, cart sheds, steam-roller sheds, mess-rooms for the men, blacksmiths', carpenters', plumbers', and masons' shops, house for general foreman and horse-keeper, general stores, offices, etc. The cost of the whole was 7,000*l*.

The excess of expenditure over income on the baths was 1,058*l*. 14s. 7d., or about equal to a 1¼d. rate. The parks and spa pleasure grounds were established in 1861 under a trust deed vesting them in the Corporation, and since then a recreation ground of two acres had been established at Kingsholm in a very populous part of the city; also the Priory recreation ground of 9 acres, and one at Saintbridge, acquired under the extension order of 6 acres.

The new infectious diseases hospitals at Over, which were opened in 1903, provided three ward pavilions giving accommodation for forty beds, and one administrative block. It was situated on about 20 acres of land, which were purchased by the Corporation for this purpose. The buildings, including furnishing and land, cost 26,000*l*., and were design d by Messrs. Waller & Son and Messrs. Medland & Son, Gloucester, as joint architects.

The electric light railway was equivalent to 12½ miles of single track inside the city and 2½ miles outside, or a total of 15 miles of single track. Messrs. Alfred Dickinson & Co., of Birmingham, in conjunction with Mr. Robert Hammond, of London, were the consulting engineers for the tramways.

The overhead equipment was fed at every half mile from underground cables laid in cast-iron troughs filled up solid with bitumen, each feeder pillar being fitted with switches for isolating the length, and with telephone communicating with the car depôt. The overhead trolley wire was of copper "O" B.W.G., insulated at every pole, which were 40 yds. apart. The total cost of the electric light railway work inside the city was 128,436*l*. 13s. 7d.

Gloucester Electricity Works.

Mr. Walter J. Bache, M.Inst.E.E., Electrical Engineer, read a paper on Gloucester Electricity Works. He said the Gloucester Municipal Electricity Works were authorised by a provisional order granted in 1896, in response to an application by the Corporation. The combined electricity works and refuse destructor were designed as one scheme, but owing to delays in obtaining possession of the site, and other causes, the electricity works were running two years before the completion of the refuse destructor.

The ground on which the buildings stand consisted of made soil, and during the excavations for the foundations many traces of the Roman occupation were brought to light. The foundations were carried down to the blue lias clay, which was found at a depth of 11 ft. below the surface. Underneath the condenser pit the contractor encountered a portion of the old bed of the Severn, and two underground watercourses traversed the site diagonally from north-east to south-west, and were separated by a distance of about 30 ft. to 40 ft. A bed of quicksand in the boiler-house and a series of extraordinary pockets or depressions in the lias clay under the refuse destructor and the chimney-stack added to the builder's difficulties, and called for special methods of construction.

The buildings were of brick, with stone dressings, and consisted of two large bays for the boiler-house and engine-room respectively, a small bay containing the test-room and switch-room, with the battery-room over, and a well-arranged suite of offices and stores.

The refuse destructor was placed at a right angle to the boiler-house, and between the latter and the chimney-stack.

The lighting sets consisted of one 250-I.H.P. compound, two crank Belliss engines direct coupled to two 75-kilowatt Silvertown dynamos of inverted horseshoe type, one 500-I.H.P. triple expansion three crank Belliss engine coupled to two 150-kilowatt Silvertown dynamos of the same type as the smaller set, and one 500-I.H.P. triple expansion three-crank Willans engine direct coupled to two 150-kilowatt Mather & Platt four-pole dynamos.

The refuse destructor consisted of two "twin" cells of "Heenan" type, each with a grate area of 66 sq. ft. per cell. The Babcock boilers were placed above the cells, the combustion chambers intervening. Each twin cell was designed to deal with 25 tons of refuse per day, but the quantity dealt with often exceeded 30 tons per day.

In the discussion which followed, the President proposed a vote of thanks to the authors of the two papers. He congratulated Mr. Read on the substantial reduction in the water consumption as a result of the introduction of the Deacon meter. He held different opinions from Mr. Read on the question of the intercepting trap.

Mr. A. D. Greatorex (West Bromwich), who seconded, thought it would be better to have some different system of collection than the putting of refuse in the street.

Mr. Scorgie (Hackney) held a different opinion from Mr. Read as to the use of intercepting traps. The duty of the householder was to ventilate his own drains; the duty of the authority was to ventilate the sewers, and he did not think they should endeavour to shirk their duty and get some one else to do what they had a statutory obligation to do.

Mr. Cotterill (Bristol) mentioned that at Newport (Mon.) they had successfully dealt with the growth of weeds by the addition to the water of cupric sulphate, which he thought a rather risky experiment. The effect had been entirely to clear the reservoir and mains and to save the town a sum of over 2,000*l*.

Mr. Crump (Hinckley), Mr. Willoughby (Pontypridd), Mr. Pickering (Cheltenham) also took part in the discussion.

Mr. A. J. Dickinson (Birmingham) contended that in the case of properly-laid sewers the intercepting trap was a mistake, as it impeded the flow of the sewage.

Mr. T. W. A. Hayward (Battersea) was also of opinion that with properly-laid sewers it

was a great evil to put in intercepting traps and block what was very often the small fall on the house drains.

Mr. Bell (Swansea) and Mr. Gettings (Teignmouth) having spoken,

Mr. Read, in reply, said he had always objected in principle to the intercepting trap. It was claimed for it that it cut the sewer gas off from the house. It could not do anything of the kind. It simply provided an obstruction in the drains which paralysed their action, and set up a septic action in all the sewage which had to go through the sewer. Whatever the fall, the sewage dribbled in at one end of the trap and dribbled out at the other end, and left the solid behind.

During the day the President and members visited the Gloucester Railway Carriage and Waggon Company's works, the tramway depôt, and the electricity and destructor works, and had luncheon together at the Bell Hotel.

FIRE PROTECTION FOR LONDON.

MR. W. E. RILEY, the Architect to the London County Council, continued his evidence in support of the Bill on Friday, last week.

Cross-examined by Mr. Pembroke Stephens, K.C. (for the Royal Institute of British Architects): He considered that all the powers sought by the London County Council in the Bill were necessary and in the public interest. It was the intention of the Council to make the retrospective powers general. In 208 of the principal streets of London there were 1,136 buildings between 50 and 60 ft. in height; there were 298 in the same streets over 60 ft. in height. That represented the total number that would come under the high buildings clause—the retrospective high building clause—in 208 of the principal streets of London. The principal streets represented a proportion of about 75 per cent. of the whole of the streets to which the legislation would apply.

Mr. Pembroke Stephens: In framing the Bill, was regard had to whether the property was in a reasonably good position or had dangerous surroundings?

Witness: There has been no regard either to the situation or the class of property in scheming the clause.

Mr. Pembroke Stephens: You did not take into account whether the property was situated within easy reach of assistance in case of fire, or whether it was a distance from any means of the kind?

Witness: No, I think that has been left out from the consideration. In reply to further questions witness said that it was not intended to deal with buildings dealt with under another Act.

Mr. Pembroke Stephens suggested that the Bill left it to the County Council to prescribe what they thought fit or "reasonable."

Witness said that that was so, but an owner could go to arbitration if he did not agree.

Mr. Pembroke Stephens: "Where is there any direction in your Bill to the arbitrator similar to what there is in your own previous Act that what is to be required is what is reasonable in the circumstances of the case?

Witness: It gives him absolute power.

Mr. Pembroke Stephens: In other words you think a section, with a reference to an arbitrator in one case, to do what is reasonable according to the circumstances of the case, and in another no such words, is an equally satisfactory mode of arbitration?

Witness did not think it would influence the case materially.

Mr. Pembroke Stephens: It would be the same in the view of the County Council, but the arbitrator might look at it from a different point of view.

Witness could not agree. Replying to further questions put by Mr. Stephens witness said that that portion of the Bill dealing with prevention of fire referred to the interior of a house: "The construction and planning and such arrangements as belonged to an architect."

On Monday and Tuesday Mr. Riley was cross-examined by Counsel for various opponents.

Replying to Mr. Talbot (for the Institute of Builders and the Industrial Dwellings Co.) he said that he did not think a competent architect would have any difficulty in understanding what the new requirements were. The proposals of the Bill were necessary now because London was far more built on than in 1894. In regard to industrial dwellings he thought that in such buildings there was very little danger of fire, besides there were usually many staircases in such blocks.

Captain Hamilton, the Chief of the Fire Brigade, was then called, and, examined by Mr. Bushe, K.C., said that he considered the reduction in height from 60 to 50 ft. in buildings where special means of escape should be provided as very important. It was a most difficult matter to rescue persons from the upper floors of a building over 50 ft. in height. Projecting shop fronts were a very great danger. When a fire started in the shop it burst through the roof, and so cut off the escape of persons in the other parts of the house.

THE INSTITUTE OF SANITARY ENGINEERS, LIMITED:

VENTILATION OF SEWERS AND DRAINS.

A SESSIONAL meeting of this Institute was held on April 19 at No. 19, Bloomsbury-square, W.C., when Mr. E. R. Palmer, Vice-President, read a paper on "The Ventilating, Flushing, and Cleansing of Sewers and Drains."

He said that the sewers referred to in his paper belonged to the type known as the separate system. It could scarcely be said that the problem, which had sorely vexed sanitary engineers for the past forty years, was as yet satisfactorily solved. It had been a fruitful source of controversy for years, and many systems had been brought to the notice of municipal engineers. He assumed that it was the aim of every engineer to construct his sewers with impervious materials and watertight joints, also making provision for their ventilation. The sewers might be constructed of brickwork, concrete pipes, or stoneware pipes. After the necessary depth of excavation had been made for constructing new sewers, very great care should be taken to see that a proper foundation was secured before laying in the cement concrete, for without a good foundation the very best efforts on behalf of the engineer were frustrated. Should a subsidence of the earth take place, it meant a flaw either in the brick or pipe sewer, for where once a leak was made it went on increasing, with the result that the invert that was once laid true became defective and settled down, forming pockets, which became filled with deposits and caused a nuisance. There were other difficulties that existed in some main sewers. Sometimes the flow was less than 1 ft. per second, and then the sewer became charged with an excess of putrefied organic matter. But in some sewers, he was pleased to say, there was much greater velocity—3 ft. or even 4 ft. per second, where the discharge would, in all probability, prevent putrefaction in the sewer. And, again, there was another important matter to be taken into consideration—that was the length of discharge pipe between the intercepting trap and the sewer, which was often not ventilated, and, owing to the inadequate flush from the water-closets, the sewage was partly decomposed before entering the sewer. This caused the length of pipe to become very foul, and, considering the area and length of such pipes, it helped to increase the impure air in the sewer considerably; the large area of the inner periphery of the sewer also became coated with slime by the rise and fall of the sewage, and this could not be readily prevented, however well constructed such sewers might be.

The author then considered what influence changes of temperature have upon the sewage, and said:—"In summer time the temperature of the flowing sewage would be about 50° F., and the air in the sewer above the sewage would probably range in the course of twenty-four hours between 50° and 55° F. The outer air at ground level during the same period would possibly be between 50° and 80° F. The sewage and the air above same is lower in temperature than the outer air, except at dusk, when the radiation from the surface of the earth reduces the temperature of the air in contact with the ground level. Under these conditions there would be an escape of sewer gas from the open covers. In dry weather the outer air would have a lower percentage of humidity, and would of necessity absolve moisture from the air rising from the sewers. The effect of this would be that the watery vapour rising from the sewers would be charged with organic matter, and, as the density is about half that of dry air at the same temperature, trouble is again caused by the sewer gas rising from the surface covers. The breaking up of fine weather is usually preceded by a fall in barometric pressure, which again releases the watery vapour from the sewage, which is in a concentrated form, through the surface covers to the outer air, and, the air being then at its greatest capacity for absorbing moisture, it becomes very offensive. It is this watery vapour that ventilation has to deal with. In main and tributary sewers all are more or less contaminated with foul air. Having now mentioned a few of the causes of sewer smells, it would be as well to speak of the cleansing of sewers. Brick sewers should be periodically cleansed by the use of brooms made to suit the shape of the sewers. Where the sewers are of such size to admit the workman to pass through, it should not be a difficult task for him to scrub the sides and invert by these means. Should the sewers be constructed with pipes, then brushes of the same diameter should be drawn through, passing from one manhole to the next and so on; preference is given to a rotary action of the brush for circular pipes. This is obtained by the movement of a wheel preceding the brush. In my opinion, if more care were given to the scrubbing and flushing of sewers, the trouble of sewer smells would be greatly lessened.

We will now pass on and deal with the method of ventilating sewers. It is a common practice to adopt open surface covers level with the road for the inlet of air at intervals ranging from 40 to 100 yards, with tall shafts attached to buildings, trees, etc. The object in view is to induce a current of air in through the surface covers and to pass upwards through the shafts. This often fails to act, and frequently the reverse action takes place. The obnoxious gases are forced out through the surface covers immediately under the noses of the passers by. There are times when, under certain conditions of the wind the air enters at the surface covers and escapes at the outlet of the shafts, which are unfortunately generally fixed close to or attached to a chimney stack, often close to the chimney pots. The foul air would, in all probability, descend the chimney flues, especially if the fire had burnt out in a sleeping compartment, and, the temperature being higher than the outside, what is commonly known as a down draft would be produced. In some cases the shafts are raised above the eaves of the roof, with the result that the foul air is driven by the force of the wind through the laps in the tiles or slates, and frequently into dormer windows, and finally into the upper rooms, in some instances close to the drinking water cisterns. Is it to be wondered at that people often complain of lassitude and loss of energy when awaking in the morning where such evils exist? No wonder the sewer ventilation question becomes acute owing to the number and strength of complaints in various towns.

Having now traversed the subject of sewer smells, let us see what can be done to obviate this nuisance. I will first speak of the brick sewers. I have already dealt with the advantages of having the sewers thoroughly scrubbed. I mention this because if this is carried out as often as it becomes necessary the air in the sewers will be less difficult to deal with. It has been tried over and over again to ventilate sewers by what is known as natural ventilation, but this method has, in my opinion, failed in its object; therefore I am about to introduce another form that is mechanical to assist the natural ventilation. In the first place I must claim your indulgence for introducing proprietary appliances, such as the exhaust fan, fitted into ventilating column, combined with the full bore automatic flushing syphon. This claims to take an important part in the improvement of the ventilation and cleansing of sewers. The height of the column above ground line is at least 30 ft. The top has an ornamental coronet with galvanised wire cover, shaft is 10 in. diameter steel tube. Cast-iron base 18 in. diameter (inside measure), with trunk and flange plate set into concrete. Inside the base of column is fitted an exhaust fan. Access is given by a fitted door and lock. The power for driving the fan is water from the main. By turning on the stop-cock the water sets the fan in motion, and immediately a current of air is drawn from the sewer and forced out at the top of the column. The velocity through a 10-in. tube would be about 20,000 ft. per hour, and the cost for water to produce this would be a halfpenny (supposing water to cost 10d. per 1,000 gallons). This water, after being used for driving the fan, is taken through a pipe connecting fan and flushing tank to supply the water for flushing the sewers without additional cost. These fans may be used where required

for inducting air into sewers; also for ventilating underground conveniences; the water from the fan being taken to the flush cisterns for flushing the urinals.

I should suggest before erecting the ventilating columns that certain alterations were made to the manholes. I have no objections to the surface covers remaining open, provided they have the usual mud bucket attached. But on no account must the air from the sewers pass up through the covers. At the bottom of the manholes should be fixed (just above the benching) an iron-flanged frame secured to wall of manhole with a portable cover. The dip would always be supplied with water from the vapour arising from the sewage and remain smell proof. The object of this would be to confine the flow of air in the sewers and to increase its velocity, so doing away with the resisting force exercised by the cushion of air in the manholes. The method adopted at the present day is to block off the covers by putting in a solid iron plate, and so cause the area of the manholes to be filled with obnoxious gases. Just imagine what this means when there are some hundreds of such manholes, each probably holding 50 cubic ft. of foul air! Dispense with this, and an improvement is made aiding ventilation. Connexions with the sewers for the purpose of ventilation should be made from the top, whether it is from brick or stoneware pipe sewers. This allows for freer motion of the air; it does not become shut off nor is it likely to be silted at such times when the flow of sewage is great. It is also an advantage in ventilation for the removal of the watery vapour which rises vertically from the wet surfaces of the sewers. For a brick sewer I should recommend a 12-in. glazed stoneware pipe between sewer and ventilating column. As we are now dealing with brick sewers, I should suggest that columns with 10-in. diameter shafts and 18-in. diameter cast-iron bases were fixed at intervals with few exceptions, such as is required for lamp-posts and the lamps fixed thereon; in fact, ventilated lamp-posts without the exhaust fan. But where main sewers intercept at junction of roads, such as open spaces to cross roads, and where gradients are flat, it would be most advantageous to fix the exhaust fans to the ventilating columns with flushing tanks, tributary, or pipe sewers. Should any of these have very sharp gradients, it would be well to fix a light-balanced shield at the junction of main sewer to prevent an excess of air passing through these pipes, and so giving it more than its share of work. It may be considered that if a sewer has a very sharp gradient it must be self-cleansing. This is not found to work out correctly at all times—owing to the sharp gradient the water does not carry the whole of the solids with it, and in consequence bad smells often occur where this is found. This is one of the points where an exhaust fan and column with a flushing tank should be fixed.

If the gradients are of the ordinary kind, and the size of the sewers are, say, 9 in. diameter to 18 in. diameter, I should suggest that 6-in. shafts with 12-in. cast-iron bases as ventilating columns should be fixed to take the position of lamp-posts, possibly with few exceptions. These would require an 8-in. diameter stoneware pipe as connexion between sewer and ventilating column. Although these columns would be at least 30 ft. above the ground level, the lamps may be adjusted at any height required. I do not propose fixing exhaust fans to these columns, but I should suggest fixing exhaust fans with flushing tanks at the following places: where sewers have flat gradients, open spaces at cross roads, junction of sewers and head of sewers. There is no doubt that the wind does exert its power in forcing the gas in different directions in the sewers, but there will be no fear of compression of air in the sewers to force the intercepting trap to house connexions. The columns acting as outlets and inlets will maintain a normal condition of the air in the sewers. The exhaust fans in columns under all circumstances will keep the air in circulation, fed by the open shafts. It might be said that to allow the air to escape at a point 30 ft. above the ground level would be such as to cause a nuisance. This is not so. The air space around the outlet of the column soon neutralises the foul air, and does not become a nuisance.

I must now touch only briefly on flushing sewers and house drains. This is a very important factor for cleansing purposes. It would not be fair to any system of ventilation to exclude flushing. Automatic siphons for sewers that will work with certainty (these are to be obtained and set to operate at certain intervals) will help considerably to remove deposits, cleanse above the ordinary lines of sewage flow, and exert influence on the air in sewers. All syphons should have a full bore throughout. These give increased velocity, so that the benefit of the flush may be carried out for a considerable distance through the sewers.

If house drains were flushed twice every day from a 30-gallon automatic tank fixed at the head of the drain we should not hear of the many complaints providing the drains and ventilation are good. There is no doubt, without flushing, the intercepting trap is the culprit. It stops the flow of sewage to a great extent; some advocate its removal.

The question is, are the drains sound, and would it be safe to dispense with it? Some few years since many engineers met in London to discuss this subject, presided over by Sir A. Binnie. It was finally resolved by the local authorities that the intercepting trap must remain.

In conclusion, there is no doubt that the responsibility rests upon the shoulders of every local authority to see that their sewers are kept in such a condition as that they shall 'not be a nuisance or injurious to health.' The Public Health Act, 1875, contains the following section: —'19. Every local authority shall cause the sewers belonging to them to be constructed, covered, ventilated, and kept so as not to be a nuisance or injurious to health, and to be properly cleansed and emptied.'"

Examinations.

Examinations in Practical Sanitary Science were held in London, Liverpool, and Bristol on March 24 and 25, and the undermentioned were successful in passing:—Messrs. J. C. Nicholls, Olney, Bucks; J. D. Manners, Paddington; F. E. Brown, Gravesend; F. J. Atkinson, Manchester; J. L. Peacock, Knutsford, Cheshire; R. Rigby, Hr. Broughton, Manchester; W. Clark, Mitcham; W. Spurr, Batley, Yorks; W. F. Tudor, Maestog, Glam.; M. E. W. FitzGerald, Warminster, Wilts. The following passed the Studentship Examination:—M. F. Mann, Clifton Hill, Exeter.

THE ARCHITECTURAL ASSOCIATION SUMMER VISITS:

II.—"PARKWOOD," HENLEY-ON-THAMES.

IN all its aspects the second visit of the session, to Henley, on Saturday, 3rd inst., was a pronounced success. "Parkwood" is a recently-finished mansion having accessory buildings comprising stables, motor-house, lodge, kennels, electric plant and laundry, so that the party of members of the Architectural Association who were shown over the establishment by the architect, Mr. Wm. Flockhart, were fortunate in seeing a well-equipped modern country residence possessing at the same time much architectural merit.

The house stands upon an elevated site some 450 ft. above sea-level, and the ground formerly held a thickly-grown wood, but a judicious clearance of the oak and beech timber has given a site with charming views and an excellent setting to the main building. The exterior has distinct originality in the design of its parts, but is crowded with features with variety in form and material. This variety produces a somewhat busy effect which would become confusion but for the sobering influence of the severe lines of the roof.

Broadly considered, "Parkwood" is a rough-cast house with tiled roofs, while chimneys and other prominent features are built in red bricks of various tones and sizes, all of local manufacture. The glazed brick plinth, also made in the district, has good texture and colour. But the fronts bristle with quaint affectations, principally fashioned in roofing tiles, which receive abrupt setting in the rough-cast field.

The plan is excellent and well arranged to meet the demands of the site, but it is one, perhaps, more suited to a larger dwelling, for there is a smallness and want of breadth in almost all the parts of the interior. The dignity sought after would rise with greater force if the scheme had been expanded. The main entrance on the north is easily controlled from the servants' quarters on the west, and is convenient to the lavatory and cloak-room, which again are adjacent to the billiard-room, a piece of sound planning. The feature of the interior is the large staircase-hall facing south, at the ends of which the dining and drawing rooms are placed. Skilful use is made of a mezzanine, in which a number of bedrooms are arranged. The proportions of the rooms have been carefully studied, and the principal apartments are found to possess varying heights. The billiard-room is particularly satisfying in this respect; it is further enhanced by brick-faced walls and a good plaster vaulted ceiling.

Throughout the house may be seen some excellent wood fittings with furniture in character. The success is one that prompts the thought that it is as necessary for the mind that produces the frames and backgrounds to evolve the design of the independent objects of use. The large sliding doors of the drawing-room are discordant, but illustrate an instance where the architect is compelled to subordinate his design to the advanced ideas of a client. Colour, again, is one of the charms of the interior, and not the least interesting of the many schemes are the distemper tints on rough plastered walls of the minor parts. A useful and in some ways novel feature is the large attic, fitted up as one long gallery for games and other forms of recreation.

The immediate surroundings of the house have naturally received due consideration, but special effort has been made in laying out an Italian garden on the west front and in the flights of steps leading down to it. Here the rough cast walls and brick copings are useful materials in supplying the desirable link between house and garden. Several valuable marble antiques are set in prominent positions in the lay-out. It is instructive to observe the state of luxuriance reached in these gardens in the short period which has elapsed since their formation.

The rough-cast entrance-lodge bears the impress of the same intellect to be found upon the house, and most of the playful fancies are echoed here. There is, however, much to admire, and the blue-tiled Dutch treatment of the walls of the sitting-room, occupied by the owner during the building of the mansion, is most skilful and satisfying.

In the stable and motor-house a contrast in manner is to be seen. Here the walls are faced in brick, while some picturesque roofing adds to the excellence of a good design.

What proved to be a thoroughly enjoyable and instructive afternoon was in great measure enhanced by the courtesy and hospitality of the owner, Mr. Charles Henry, who is to be congratulated upon having secured a delightful architectural home.

THE LONDON COUNTY COUNCIL.

THE ordinary weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Mr. E. A. Cornwall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Camberwell Borough Council 14,787*l.* for the erection of baths; the Greenwich Guardians 5,115*l.* for poor law purposes; Hammersmith Borough Council 8,153*l.* for street improvement; Poplar Borough Council 9,960*l.* for electric lighting purposes and 10,212*l.* for paving works; Stepney Borough Council 1,650*l.* for land for street market and public garden; Woolwich Borough Council 10,221*l.* for street improvement and 2,712*l.* for brick making plant and buildings and repayment of part of loan for dust destructor.

Insurance of Property Against Fire.—The Finance Committee submitted for the approval of the Council a scheme for the creation of an insurance fund to provide for loss or damage caused by fire in respect of the property of the Council. With regard to the amount of risk which the Council should undertake, the Committee express the opinion that at first the Council should not undertake the whole of the risks of its various properties. Some of these risks are very large in amount, and the Committee think that until a larger fund than the Council at present possesses (about 58,000*l.*) has accumulated, they would be well advised not to undertake more than a certain proportion of the larger risks. The scheme, accordingly, provides that the fund shall take the full amount of all risks up to and including 10,000*l.*, and that with regard to risks exceeding 10,000*l.* the fund shall take the sum of 10,000*l.* and one-half of the balance of such risks, but not exceeding 25,000*l.* in respect of any one risk.

Mr. Bruce explained that for some years past it had been evident that the premiums demanded by insurance companies for the Council's risks were far higher than they should be.

The report was adopted.

Schools.—The Education Committee recommended and it was agreed—

(*a*) That the necessary steps prescribed by section 8 (1) of the Education Act, 1902, be taken with the view of giving public notice of the Council's intention to erect a permanent school, with accommodation for about 1,100 children, on land adjoining the "Southfield" school (Wandsworth), and that the Board of Education be informed of this proposal.

(*b*) That the necessary steps prescribed by section 8 (1) of the Education Act, 1902, be taken with the view of giving public notice of the Council's intention to acquire a site for future school requirements in Merton-road (Wandsworth), between the "Southfield" school and the West-hill school, and that the Board of Education be informed of this proposal.

Light and Air.—Central School of Arts and Crafts.—The following recommendation of the Committee was agreed to—

That the estimate of 1,150*l.*, submitted by the Finance Committee, in respect of the settlement of the claim of the trustees of the Strickland estate for compensation amounting to 1,000*l.* for loss of rights of light and air, consequent upon the erection of the L.C.C. Central School of Arts and Crafts, and the surveyor's fee and solicitor's costs in connexion with the matter, be approved.

Appointment of Lecturer—L.C.C. School of Building.—The following recommendation of the Committee was also agreed to :—

That Professor Beresford Pite, F.R.I.B.A., be appointed director of architectural instruction and lecturer on architectural subjects at the L.C.C. School of Building.

The Hampstead-road Improvement.—The Improvements Committee brought up a further report with reference to the scheme for the widening of the Hampstead-road and the method of dealing with the Old King's Head public-house at the corner of Hampstead and Euston roads, the site of which it requires in connexion with the improvement. Some time back, when the Committee suggested a scheme of reinstatement in order to save the expenditure of some 30,000*l.* in buying up the licence and abandoning it, the report was referred back with instructions to report as to dealing with the licence through the magistrates. The Committee now recommended that no further steps be taken for the acquisition of the Old King's Head until after the next licensing sessions, and that a representation should be made to the justices with a view to the renewal of the licence being refused.

Sir W. Collins moved as an amendment that the recommendation be referred back to the Committee with instructions at once to serve all remaining notices to treat and to report as soon as possible whether it is practicable to deal with the licence of the Old King's Head public-house through the justices under the Licensing Act.

Mr. McKinnon Wood seconded the amendment.

After discussion, the amendment was carried by a large majority.

On the amendment being put as a substantive motion,

Lord Elcho moved a further amendment to the effect that negotiations should be reopened for the reinstatement of the premises.

Upon a division the amendment was rejected by seventy-four votes to thirty-six.

Sir W. Collins's amendment was then carried as a substantive motion.

New Tramways.—The Highways Committee recommended that an expenditure on capital account of 287,000*l.* should be sanctioned in respect of the construction or reconstruction and the equipment for the underground conduit system of electrical traction of the following tramways :—(1) From Camberwell-green *viâ* Denmark-hill and Lordship-lane to the Crystal Palace-road ; (2) from the terminus of the authorised tramways in Lordship-lane *viâ* London-road to Dartmouth-road, Forest-hill ; (3) from Grove-vale *viâ* Goose-green and Peckham-rye to Stuart-road, Peckham ; (4) from the existing tramways in New-cross-road *viâ* Lewisham High-road, Loampit-vale, to Rushey-green ; (5) from the terminus of the existing tramways in Trafalgar-road, Greenwich, *viâ* Blackwall-lane to Blackwall Tunnel.

The recommendation of the Committee was, after a short discussion, adopted.

Denmark-hill Bridge.—On the recommendation of the Bridges Committee, the following recommendation was agreed to :—

That the estimate of 7,000*l.*, submitted by the Finance Committee, in respect of the reconstruction of the bridge carrying Denmark-hill over the London, Brighton and South Coast Railway and the South-Eastern and Chatham Railway, be approved.

Housing.—The Housing of the Working Classes Committee recommended, and it was agreed—That the estimate of expenditure on capital account of 51,500*l.*, submitted by the Finance Committee, be approved, in respect of the erection of five blocks of dwellings, including all incidental expenses, on the Webber-row area comprised in the London (Webber-row and Wellington-place and King's Bench-walk, Southwark) Improvement Scheme, 1899.

The dwellings will contain accommodation for 1,130 persons in 120 tenements of three rooms, ninety-six tenements of two rooms, four tenements of one room and eighteen cubicles. Four blocks will each contain accommodation for 230 persons, while the fifth block, with a frontage to Waterloo-road, will, in addition to dwelling accommodation for 210 persons, contain ten shops with store-rooms on the ground floor.

White Hart-lane Estate—Erection of Sixty Cottages.—The same Committee reported that the question of the development of the White Hart-lane estate, Wood-green, has engaged their attention for some time past, and after full consideration they were of opinion that the Council should now undertake the erection of an additional number of cottages. Section A of the estate, comprising about 5 acres, has already been developed, while roads have been formed and sewers constructed on section B, which has an area of about 15 acres. The Committee were not prepared, however, to advise that the whole of this area should be built over immediately, but asked the Council to sanction the erection of sixty cottages of different types on a part of section B in Spigurnell-road, Waltheof-avenue, Gedeney-gardens, and Risley-avenue. In view, however, of the hitherto slow letting of the cottages built upon this estate the Committee thought that the Council would desire them to explain somewhat fully the difficulties which have had to be contended with.

"The Council will remember that when the estate was purchased we reported that the northern portion was not ripe for development, and the purchase thereof was regarded in the light of an investment with a view to meeting future requirements. The southern portion, which is situate within about a mile of three railway stations, and has a considerable frontage to a tram-road, and having also the prospect of a tube railway being constructed through it, was rightly regarded as promising for early development, and this view we see no reason to modify. Many of the difficulties so far encountered are such as are incidental to new estates in the early stages of their development, and may be expected to disappear as the work of covering the estate is proceeded with. The slow letting of the first cottages erected on an estate is not a new experience, and cannot be regarded by itself as conclusive evidence that the estate will not eventually prove to be a success. Some of the difficulties encountered are of a temporary character. When the estate was purchased there was a large area of land between the estate and the railway, and it may fairly be inferred that the Council's action has stimulated the development of this land, which was more favourably situated and riper for building. This estate of about 100 acres has been very rapidly covered, and the work is now nearly completed. The result has been that for the moment building operations have proceeded somewhat in advance of the growth of the population in the district, and this must have had some prejudicial effect on the letting of the Council's cottages. We consider, however, that the completion of this estate will ultimately have a beneficial effect on the White Hart-lane estate, as it will bring a large population right up to the border of the Council's property, which must thereby become riper for building than it would otherwise have been. . . . Arrangements have recently been made for letting part of the unoccupied land in allotments. Thirty-seven plots have been staked out for this purpose, and of them twenty-nine have already been let. It is gratifying to know that the letting of the cottages is proceeding more rapidly, and that tenants remain longer in occupation. With regard to the cottages themselves, we have considered whether it is not possible to reduce the cost of construction so as to let cottages on the estate at a lower rental. To this end we instructed the architect to modify the plans of the dwellings, to simplify the specification, and to obtain offers, without bills of quantities, from reliable builders accustomed to erect houses of a similar class, such offers to name the conditions under which the builders were prepared to carry out the work, the work to be executed under the superintendence and to the entire satisfaction of our architect. The result has been eminently satisfactory, and we are able to report that prices have been obtained which are much lower than any before presented to the Council, and will enable the houses to be let at lower rentals. We think that in the first instance the Council should proceed with the erection of twenty-eight first-class or five-roomed cottages, eight second-class or four-roomed cottages, and twenty-four third-class or three-roomed cottages, each cottage being also provided with a scullery and the usual conveniences. In respect of these cottages we propose not to adopt either of the usual methods of procedure for getting similar work done—*i.e.*, by contract in the ordinary way or through the agency of the Works Committee—but to select Mr. G. E. Pulford to erect the cottages at the prices he has quoted for each type—viz., first-class cottage 228*l.*, or 235*l.* for each corner cottage; second-class cottage 183*l.*, or 188*l.* for each corner cottage; third-class cottage 153*l.* 10s., or 158*l.* for each corner cottage. Mr. Pulford stipulates that payment shall be made to him every fortnight to the extent of 80 per cent. of the value of the work done, that 15 per cent. shall be paid on the completion of each house, and that the remaining 5 per cent. shall be paid within one month after the completion thereof. . . ."

Recommendations giving effect to this were agreed to after discussion and the defeat of two amendments to refer the matter back for further consideration.

Erection of an Addition to the Balcony of the Savoy Hotel.—The Building Act Committee reported as follows :—

"We have considered an application submitted by Messrs. Collcutt & Hamp, on behalf of the Savoy Hotel Company, for consent to the erection of an addition to the balcony on the embankment front of the Savoy Hotel. The proposed addition, which will extend along nearly the whole length of the front of the hotel, will project a distance of 6 ft. and will be about 170 ft. long. Having regard to the fact that the road between the hotel and the railings of the embankment gardens is not much used as a public thoroughfare, we think that the Council may allow the proposed addition. . . ."

Mr. Howell J. Williams moved that the matter be referred back. He had calculated that the sanction meant a free gift to the hotel of 6,300*l.*, and it was undesirable to allow such an addition to be made. This was the first time that the Building Act Committee had given sanction to the provision of a balcony projecting along the entire front of a building.

Mr. Straus seconded, and, after discussion, the amendment was carried, Mr. Burns remarking that the proposal was a preposterous and dangerous one.

Width of Way and Line of Frontage.—The same Committee recommended that consent be not given to the erection of an iron and glass covered way in front of "Normanhurst," Priory-road, West Hampstead, on the application of Messrs. Baker & May for Mr. F. P. Scholte, although the application was supported by the local authority.

Mr. E. Smith moved, and Mr. Hanhart seconded, that the application be granted, but, after discussion, the recommendation of the Committee was carried.

Reconstruction of Tramways in Battersea Park-road—Alterations to Bridge.—The following recommendation of the Bridges Committee was carried :—That expenditure on capital account not exceeding 1,350*l.* be sanctioned in respect of the reconstruction of a portion of the bridge carrying Battersea Park-road over the lines of the London, Brighton, and South Coast and the South-Eastern and Chatham Railway Companies.

Ground Plan of London—Ownership Section.—It was agreed to complete the ownership section of the ground plan of London at a cost of 5,400*l.*

Indication of Houses of Historical Interest.—It was agreed that the undermentioned houses of historical interest be commemorated by means of memorial tablets :—(*a*) No. 64, Duncan-terrace, Islington (Charles Lamb) ; (*b*) No. 31, Baker-street, W. (Edward Bulwer Lytton).

Unemployed Workmen Bill.—The following recommendations of the Parliamentary Committee were agreed to :—

(*a*) That the Council is of opinion that, whilst legislation on the subject of the unemployed is urgently needed, it should place the cost on national and not on local funds.

(*b*) That the Parliamentary Committee be authorised to convene a conference at the County Hall of representatives of the City Corporation, the metropolitan borough councils and boards of guardians with regard to the Unemployed Workmen Bill introduced into Parliament in the session of 1905.

London Squares.—The same Committee recommended, and it was agreed :—

That it be referred to the Parliamentary Committee to prepare a Bill for introduction into Parliament in the session of 1906, with a view to securing that the garden squares and enclosures in London shall remain unbuilt upon.

Highbury Fields—Memorial to Islingtonians who Died in the South African War.—The Parks Committee reported that the Council on March 1, 1904, granted permission to the Council of the Metropolitan Borough of Islington to erect, upon a site on Highbury Fields, a memorial to Islingtonians who lost their lives in the South African war. The permission was subject to the design for the memorial and the inscription to be placed thereon being submitted to and approved by the Council. It is desired that the erection of the memorial may be completed so that it may be unveiled by the Duke of Fife on July 15, 1905. The design is by Mr. Bertram Mackennal, and the Committee have approved the same on behalf of the Council.

Acton Sewage Bill, 1905.—The Parliamentary Committee reported that, after considerable negotiations, an agreement has been arrived at with the promoters of this Bill as follows :—

(i.) That the Acton Urban District Council is to pay a differential rate (assessed upon the Middlesex County rate basis) of ¾d. in excess of the proportion of the county rate levied by the London County Council for main drainage purposes and a capital sum of 27,500*l.* towards the Council's past capital expenditure on main drainage.

(ii.) That the Council is to pay a sum of 27,500*l.* towards the cost of the construction by the Acton Council of the storm-water sewer proposed by the Bill to be constructed.

These terms, in effect, provide that the Acton Council shall make a capital payment and an annual contribution slightly in excess of the amounts payable on the basis of population, whilst the Council's contribution to the cost of the new storm relief works appears to be not in excess of the proportionate benefits which London will receive.

It was agreed that the action taken in withdrawing the petition against the Acton Sewage Bill, 1905, be approved.

Colney Hatch Asylum.—Improvements in ventilation and lighting and improvement in sanitary arrangements at this asylum at a supplemental maintenance estimate of 2,000*l.* were agreed to.

Cannon-street Fire Station.—The Fire Brigade Committee reported that the Works Committee have agreed to undertake the work at the amount of the architect's estimate of 16,000*l.*

Housing.—The Housing of the Working Classes Committee recommended, and it was agreed, that, subject to the estimate submitted by the Finance Committee in respect of the erection of five blocks of working-class dwellings on the Webber-row area, Southwark, being approved, the work of erection be carried out without the intervention of a contractor; and that the working drawings, specification, bills of quantities, and estimate of 33,800*l.* in respect of four blocks, and an addendum bill of 600*l.* applicable to the fifth block, be referred to the Works Committee for the purpose, provision being made for the erection of the fifth block at the same schedule of prices.

Other business was transacted, and after a sitting lasting over eight hours, the Council adjourned for the Whitsuntide recess until July 4.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Erection of a Building on the South-east Side of Warwick-place, Paddington.

Paddington, North.—That the resolution reported to the Council on May 16, 1905, consenting to the erection of a building on the south-east side of Warwick-place, Blomfield-road, Paddington, be rescinded.—Agreed.

Lines of Frontage and Projections.

Hammersmith.—Five houses with shops on a site abutting upon the west side of Askew-road and south side of Gayford-road, Hammersmith (Mr. J. J. Kelf for Mr. A. Gard).—Consent.

Lewisham.—An addition to a one-story building at the rear of No. 184, Brownhill-road, Catford, abutting upon St. Fillan's-road (Mr. E. Wright for Mr. H. Amey).—Consent.

Norwood.—Buildings on the western side of Brixton-hill and New Park-road (Messrs. D. Young & Co. for Messrs. F. W. E. Hockey, W. J. Peall, W. T. Key, and R. W. Brading).—Consent.

Hammersmith.—A house on the western side of Eynham-road, Hammersmith, to abut also upon the northern side of Glenroy-street (Mr. J. R. Myring).—Consent.

Width of Way.

Marylebone, East.—Retention of a greenhouse at the rear of "Eastlake House," No. 133, Park-road, St. John's Wood, at less than the prescribed distance from the centre of the roadway of North-bank (Mr. A. J. Thomas for Miss E. Soutter).—Consent.

Stepney.—A one-story addition at the rear of No. 55, Commercial-road, Stepney, with external walls at less than the prescribed distance from the centre of the roadway of Plumber's-row (Mr. W. E. H. Crawley for Dr. Bernstein).—Refused.

Width of Way and Lines of Frontage.

Rotherhithe.†—A pumping-station on the western side of New-square and New-lane, Shad Thames, Rotherhithe (Mr. M. Fitzmaurice for the Main Drainage Committee of the Council).—Consent.

Lines of Frontage and Construction.

Hackney, North.—That the Council do not accede to the request of Messrs. H. Pumfrey & Son, on behalf of Mr. J. H. Kemp, for permission to retain an iron shed upon part of the forecourt of No. 19, Filey-avenue, Upper Clapton.—Agreed.

Formation of Streets.

Lewisham.—That an order be issued to Mr. J. Johnson, sanctioning the formation or laying-out of a new street, and in connexion therewith the erection of stabling, on a site at the rear of houses on the south side of Fernbrook-road, and approached from the western side of Manor-lane, Lewisham.—Consent.

Islington, North.—That an order be issued to Mr. C. W. Callcott refusing to sanction the formation or laying-out of a new street for foot traffic only to be used as a covered market, out of the south-west side of Highgate Hill, Islington (Mr. J. W. Galton).—Refused.

Buildings for the Supply of Electricity.

Southwark, West.—The use of two railway arches, Nos. 11 and 14, on the northern side of a roadway connecting Gravel-lane and Ewer-street, Southwark, as a battery-room and transformer-room (Mr. G. A. Lansdown for the London Electric Supply Corporation, Ltd.).—Consent.

Space at Rear.

Strand.—A modification of the provisions of section 41, with regard to open spaces about buildings, so far as relates to the proposed erection of Nos. 102-114, Wardour-street (Mr. H. Tanner, jun., for Messrs. J. Mitchell & Co.).—Consent.

Space at Rear and Projections.

Kensington, South.—An addition, and projecting wooden oriel windows, at the rear of No. 24, Kensington-court, Kensington (Messrs. J. Barker & Co., Ltd., for Mrs. Reeves).—Consent.

Working-class Dwellings.

Hackney, North.—A deviation from the plan sanctioned for the erection of three blocks of working-class dwellings on a site on the west side of High-street, Stoke Newington, at the corner of Victoria-road, so far as relates to the erection of a row of baths (Messrs. Joseph & Smithem for the Four Per Cent. Industrial Dwellings Company, Ltd.).—Consent.

Hackney, Central.—A deviation from the plans approved for the erection of blocks of dwellings on a site at the corner of Dalston-lane and Navarino-road, Dalston, so far as relates to the erection of a row of baths (Messrs. Joseph & Smithem for the Four Per Cent. Industrial Company, Ltd.).—Consent.

The recommendation marked † is contrary to the views of the local authority.

Illustrations.

THE ROYAL ARMY MEDICAL CORPS MEMORIAL, ALDERSHOT.

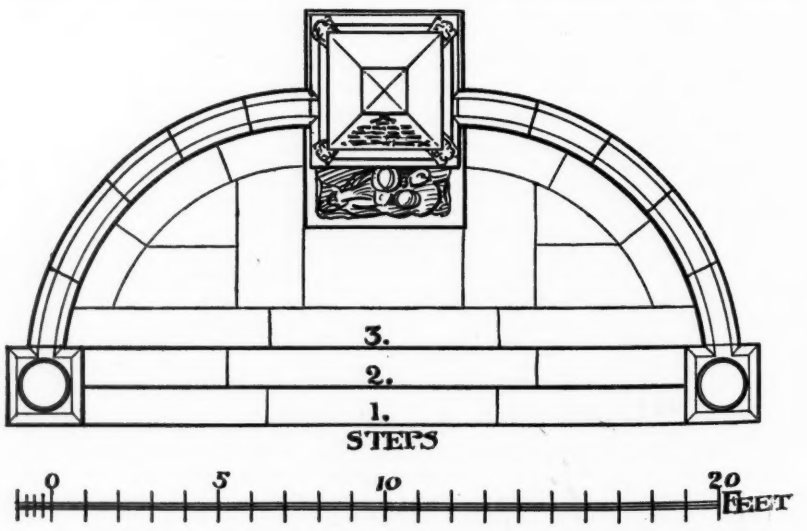
THIS memorial has been erected by all ranks of the Corps in memory of their comrades who died during the South African War. It is situated within the grounds of the R.A.M.C. officers' mess at the top of Gun Hill, Aldershot, and faces towards the roadway. It was unveiled by H.M. the King on May 24.

The materials consist of grey Cornish granite and bronze. The granite is finished with a tooled surface. Old gun-metal from Woolwich Arsenal has been used for the tablets and other portions of the bronze work.

The central bronze group, which was modelled by Mr. W. Goscombe John, A.R.A., might be entitled "An Act of Duty." It represents an officer and a private attending to a wounded soldier of the line. The fourteen bronze panels contain the names of 21 officers and 293 non-commissioned officers and men who died in South Africa during the war. The monogram and badge of the Corps are reproduced on the upper part of the obelisk. The bronze braziers on the two ends carry on the decorative traditions of the old classical altar of the "*manes*," and are arranged so that they can be filled with lights to burn on commemorative occasions.

The architect, Mr. R. Weir Schultz, is responsible for the complete scheme of the monument, and for the details. Mr. Goscombe John has very ably carried out the central group in sympathy with the architect's ideas.

The granite work was executed by Messrs. Fanning & Co.; the subsidiary bronze work was prepared by Mr. Lawrence Turner and cast by Messrs. Broad & Co. The bronze group was cast under the direction of Mr. Goscombe John by Messrs. Hollingshead & Burton, of Thames Ditton. The total cost of the work has been under 1,100*l.*



Plan of War Memorial at Aldershot.

TULLYLAGAN, CO. TYRONE, IRELAND.

THIS house is about to be erected from the designs of Messrs. Hart & Waterhouse, of London. It is intended to use the hard local stone with as few mouldings as possible. The walls will be hollow, as the situation is very much exposed.

The roof is to be covered with green Westmorland slate.

The feature of the house is the large inner hall with its recessed fireplace and oak screen, which separates the corridor and gives an opportunity for effective pierced carving. The walls will be panelled, and the floors lined with oak.

Messrs. Chapman & Lowry, of Haslemere, Surrey, are the contractors.

HOUSE AT DENBIGH.

THIS small house, built from the designs of Mr. E. Guy Dawber, is treated with rough-cast on the walls, and the roof covered with grey-green Welsh slates, graduated from the eaves to the ridge. The casements are leaded, and old stone has been worked into the entrance gable.

The contractors were Messrs. Roberts & Son, of Rhuddlan.

CHURCH OF ST. CHAD, LONGSDON.

ANOTHER view of this church from the west end, with a plan and description, was published in our issue of September 17 of last year; and to this it may be sufficient to refer the reader.

Mr. Gerald C. Horsley is the architect, and the drawing is exhibited at the Royal Academy.

ILLUSTRATIONS OF LOSTWITHIEL CHURCH, CORNWALL.

THESE illustrations are given in connexion with the first article this week, to which the reader is referred.

The two exterior views of the church are from photographs taken by Mr. J. H. Coath, of Liskeard.

ARCHÆOLOGICAL SOCIETIES.

NEWCASTLE SOCIETY OF ANTIQUARIES.—A meeting of the Newcastle Society of Antiquaries was held on the 31st ult. in the library of the Castle, Mr. F. W. Dendy presiding. The Council recommended, and it was agreed, that whole-day meetings should be held during the year at Bellingham, in August or September, at Cockburnspath and Coldingham and at Brancepeth; and half-day meetings at Chester-le-Street and Lumley Castle and at Finchdale Abbey. Mr. J. C. Hodgson, F.S.A., presented a collection of Northumbrian proverbs, and Mr. F. W. Dendy read a paper on the Killingworths of Killingworth. The Secretary (Mr. Robert Blair) announced that in answer to their appeal in respect to the Blackgate, for the repair of the masonry at the portion exposed by the demolition of old buildings and for other necessary work, they had received subscriptions amounting to 53*l.* 19s. They wanted altogether 200*l.* The Chairman said that Mr. J. D. Milburn, one of the proprietors of the property adjoining the Blackgate, having determined to rebuild the portion abutting on the north side of the gate to the height of a single story only, it was necessary to make some repairs to the masonry of the elevation thus prominently opened to view. The demolition of the old houses on Mr. Milburn's site had revealed the picturesque outline of the gate, which at this point rose to a considerable height from the ancient moat. The work which must be immediately undertaken comprised the cleaning off of the white-wash and old plaster-work, the removal of a drain pipe, filling in of a few stones, the opening out of an archway (which possibly spanned the ditch within the gate), and the provision of an iron grille to enclose the same. In addition it was essential that the loops of the guard-rooms should be repaired and opened out, and some splayed plinth courses renewed. An additional work much to be desired was the enclosure of the long narrow space within the gate on the south side, by the formation of a shed with a glass roof, etc., to receive the heavier altars and other objects presented to the society. This space covered the pit, or prison, known as the "Heron Pit," and extended from the Blackgate, erected in 1247, to the "second" or original gate of the Norman curtain. The Secretary reported that a Roman centurial stone had been discovered some time ago near Gilsland railway station.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting held at the Royal United Service Institution, Whitehall, on Monday evening, the 5th inst., Mr. N. J. West, President, in the chair, a paper was read on "The Improvement of London Traffic," by Mr. Charles Scott Meik and Mr. Walter Beer, in which the authors described the scheme laid by them before the Royal Commission on London Traffic last year, and offered it as a basis for discussion. Their chief proposals are for two main avenues through London from North to South and from West to East respectively. The north to south main avenue is designed to commence near Enfield and to extend through Tottenham, South Hornsey, and Highbury, past the Parcels Post Office and Mount Pleasant, through Hatton Garden, across Holborn, the Strand, and the River Thames to St. George's Circus. Thence through Camberwell, Lambeth, and West Dulwich to the neighbourhood of Croydon. The west and east main avenue is intended to commence near Hounslow and to pass through Ealing, Acton, and Notting Hill, Paddington and Marylebone, to a junction with the north and south main avenue at Mount Pleasant. From Mount Pleasant this avenue would continue eastwards *viâ* Liverpool-street, through Stepney, Bow Common, and East Ham to the neighbourhood of Dagenham. These main avenues would together be 48 miles long, and the authors propose that for rather more than half their length they should be constructed with upper and lower roadways, the former passing over all cross traffic, and the whole design constituting a double-decked street. Each avenue would be 160 ft. wide, would provide a special road for fast motor traffic, a double line of tramway, and a double line of railway, the latter being situated either overhead (as in the case of the suspended railway at Elberfeld in Germany), in shallow subway, immediately below the main avenues, or in tube at a greater depth. The authors considered that the expenditure on land could be almost entirely recouped by purchasing on both sides of the avenues land in excess of that required for the roads, and selling the surplus at its improved value.

COMPETITIONS.

TECHNICAL INSTITUTE, ROCHESTER.—One hundred and thirty-one designs have been received for the New Technical Institute at Rochester. The assessor has not yet been appointed.

PUBLIC LIBRARY, WORTHING.—The assessor in this competition was Mr. J. Belcher, A.R.A., and the plans submitted by Mr. H. A. Crouch have been selected. Three additional designs were selected by the committee to send to Mr. Carnegie, who is supplying the funds for the erection of the library—*i.e.*, those of Messrs. Lanchester & Rickards, Messrs. Russell & Cooper, and Mr. J. O. Gibson.

BOURNEMOUTH PARK-ROAD SCHOOLS, SOUTHEND-ON-SEA.—Of the fifteen sets of plans (by thirteen architects) sent in for this competition the Education Committee for the Borough of Southend-on-Sea have placed the following as the first three in order of merit:—(1) "Utility with Economy," Scheme B., Messrs. Greenhalgh & Brockbank; (2) "Light and Air." Mr. G. E. Clare (Messrs. Clare & Ross); (3) "Dum Spiro Spero," Mr. D. H. Smith.

BOOKS RECEIVED.

A MANUAL OF THE LAW OF FLATS. By G. St. Leger Daniels, Barrister-at-Law. (*The Estates Gazette.* 3s. 6d.)

THE RUDIMENTS OF PRACTICAL MATHEMATICS. By A. Consterdine, M.A., and A. Barnes, M.A. (John Murray.)

Correspondence.

LONDON DISTRICT SURVEYORS.

SIR,—I think that you will agree with me that great inconvenience is caused to the building public by the delay in filling up vacancies by the London County Council. The Metropolitan Board of Works always filled up any vacancy in a month or six weeks, while at the present time there are at least five districts vacant, and builders have to find out who is temporarily carrying on the business. Some interim surveyors are in office months and are allowed to practise, while the Council insists on permanent officials giving up practice, which accounts for the rapid falling off in the number and quality of the candidates.

The only person named in the Building Act as not allowed to undertake other work is the superintending architect, and yet the Council pile on him all kinds of duties and the supervision of an immense number of clerks.

The members of a small committee of the Council appear to do all they can contrary to both letter and spirit of the Act under which they are supposed to work. ARCHITECT.

COUNTY BOUNDARIES.

SIR,—The transfer of ten parishes from Essex to Hertfordshire is certainly, as Mr. Patrick remarks, a drastic alteration of county boundaries, but such alterations are, unfortunately, not nearly so unusual as he appears to think. In Warwickshire, at any rate, the boundaries seem to be constantly changing, and the reasons for such changes are not always evident. For instance, the boundary between the counties of Warwick and Leicester follows for many miles the Watling-street. This is not merely a county boundary, it is the historic boundary between the Danes and the English, yet, for some unknown reason, the line of this old boundary was broken a few years ago by the transfer of the parish of Hydes Pastures from Warwickshire to Leicestershire. On the western side of the county a similar, but less important, change has been made where the boundary used to follow the line of the Icknield-street across the open moorland of Sutton Park. In 1895 Warwickshire lost part of the parish of Mollington, which had belonged to it since the time of the compilation of the Domesday Book at the end of the XIth century. In the same year it also lost parts of two other parishes, while the whole of the parish of Stoneton was transferred to it from Northamptonshire, and, in the next year, the parish of Oldberrow from Worcestershire. And so one might proceed and soon make a very considerable list of changes if it were desirable to do so. Perhaps, now that the British Archæological Association has taken the matter up, such changes will be less common in the future than they have been in the past. BENJAMIN WALKER.

Erdington.

THE VOICE OF THE ASSOCIATE.

SIR,—Will you allow me a small space in which to draw attention to a point of considerable importance at the present moment to the large body of Associates of the R.I.B.A.?

Some of these gentlemen—I think I may say many of them—have felt it their duty at recent meetings to give expression to their opinions on the subject of the election of Fellows by exercising their undoubted right of opposing, in some instances, the nominations endorsed by the Council.

This action, which, from the first, was viewed with obvious impatience, has recently been made the subject of outspoken protest on the part of some other members, who, apparently, hold peculiar views upon the subject of voting upon questions from the chair. It has, apparently, become an established tradition that the questions submitted by the chair for the verdict of the meeting are so submitted merely as a matter of form, and are by no means to be a matter for deliberation, much more opposition, which last is regarded as heterodox and unpleasant. On the most recent occasion, after various suggestions for disposing of this uncomfortable factor (and so reducing the voting to a farce) had failed, I myself was positively charged by a grave and highly-respected member with endeavouring to over-ride the by-laws, because, forsooth, I found myself at variance with the Council and its supporters upon the question before the meeting, and voted accordingly.

Now this is intolerable. I am aware that a comparatively young Associate may easily err upon the side of presumption when in the company of many of the leading lights of the profession, and also that, for many years, the attitude of the junior members has been so profoundly respectful that any effort to take an intelligent part in the conduct of the affairs of their Institute may easily appear startling; but surely the surprise should be intensely gratifying to our elders, instead of evoking fretful protest.

I am not alone in hoping that, within a comparatively short time, it will be found that the junior members have awakened to a livelier sense of the dignity of their status, and of the duties and responsibilities which attach to every grade of membership of the Institute to which we have the honour to belong.

ASSOCIATE.

THE ARCHITECTURAL ASSOCIATION.

SIR,—I am surprised to find that funds have been forthcoming to very nearly cover the somewhat extravagant expenditure on the new premises, as many of the old and tried members are dropping out, or, at least, losing interest, and no wonder.

Of late years it seems to be the custom that, if some architect writes a book, or wins two or three competitions, he is elected a member (often by acclamation), and, in a short time, pitched into the Council, and very quickly President, knowing nothing of the work of the Association. (Notice the date of election of the present list of officers, the majority in this century.)

In the years long since, men worked through every grade of office, and while still young attained the highest position; there was a nice feeling between the members, and the Society was one of mutual help; friendships were formed and lasted for life. Now all is changed.

This is not my opinion only; I have heard the expression of many opinions.

OLD STAGER.

R.I.B.A. STUDENTS.

SIR,—No one having answered your correspondent N. C.'s letter in your issue of the 27th ult., I may be allowed to suggest to him that his letter will astonish the younger members of the profession far more than my last. Living as he does (as I see from the R.I.B.A. Kalendar) in a Yorkshire town boasting but one other member of the Institute, he can hardly have had as much experience of his fellow-students as I, who am in daily intercourse with those who live in London; and I know that my letter expressed the views of a large number of the London R.I.B.A. students. Following N. C.'s lead, I would commend to his consideration the following facts:—

(1) That unless one lives within a stone's throw of one's work it is impossible to work eight hours a day in an office and five hours a day at home.

(2) That most students take at least half an

hour to reach home, and require a little time for meals, sleep, and social duties.

(3) That an employer would not be over-satisfied towards the end of the third year of study with a man who had worked five hours per day at home *without one break* for three years, for he would not be fit to *work* in the office.

(4) That "all work and no play makes Jack a dull boy."

(5) That an education covering the ground of the R.I.B.A. examinations crammed into three years is no education, and would be largely forgotten within three weeks.

Your correspondent has disregarded my point that the winners of the R.I.B.A. prizes are largely non-members; in fact, out of 238 winners in those competitions, in which there is an age limit, only 116 are members; how many of these latter have passed an examination I cannot say, but I believe very few.

In conclusion, my object in writing to you was not to endeavour to lessen the labour involved in studying for the examinations, but that involved in the preparation of the testimonies of study. STUDENT, R.I.B.A.

The Student's Column.

TYPICAL STRUCTURES IN CONCRETE-STEEL.—XXIII.

LOCOMOTIVE DEPÔT AT RENENS, SWITZERLAND.

A NOVEL application of concrete-steel is to be found in the locomotive depôt recently erected at the station of Renens, on the system of the Jura-Simplon Railway Company, near Lausanne. Our readers are aware that buildings for the accommodation of locomotives are of two distinctive types:—(1) Roundhouses with turntables giving access to radiating tracks, and (2) rectangular sheds with parallel tracks. The latter type appears to be generally preferred in the present day and is that adopted in the design of the buildings described in the present article.

In the early days of the railway system timber framework entered largely into the roof construction of such buildings, then after a time metal began to be generally used. The most recent designs of locomotive sheds are to be found in Great Britain, where, curiously enough, a return has been made to the employment of timber framework, this development at first sight appearing to constitute a movement of retrograde character. On consideration, however, it must be recognised that there is some justification for the abandonment of metal work, which, owing to oxidation and injury due to the sulphurous fumes contained in smoke emitted from the locomotives, is so rapidly corroded as to involve heavy maintenance charges, by reason of the necessity for replacing large portions of the work at comparatively frequent intervals. In fact, the life of a steel roof truss cannot be put at more than ten or fifteen years. On the other hand, the products of combustion, thanks to the empyreumatic substances disengaged therefrom, tend to preserve timber and impart to it in some measure the quality of non-flammability.

The type of locomotive shed favoured in this country offers the advantage of being suitable for the application of flat roofing, which is difficult and costly in the case of a roundhouse. Flat roofing lends itself to more effective lighting arrangements and to the exclusion of cold air, which in winter often freezes water in the locomotive boilers. Further, it can be constructed very economically, for a thin flat roof supported by light columns costs far less than the complicated circular roofing system of a roundhouse.

Having made a careful examination of the various designs of locomotive sheds exemplified by the railways of different countries, Professor Bosset, a distinguished engineer commissioned by the Jura-Simplon Company, reported in favour of the British type, but with the modification that all parts of the structure usually built of timber should be constructed in concrete-steel, by the use of which the risk of fire is absolutely avoided. In consequence of this report, the State *service du contrôle* decided to reject the two sets of plans previously submitted by the company, the first including steel and the second timber framework, for the depôt to accommodate twenty-four locomotives at the station of Renens.

After a minute study, Professor Bosset produced the design for a roof system entirely in concrete-steel and including not only the roof proper but also the hoods required for collecting smoke from the engines in the shed and the vertical flues for its discharge into the open-air. The advantages of the British flue arrangement are that when the funnel of a locomotive is introduced beneath a series of flues it projects for a distance of about 15 in. into the continuous hood, and at whatever point the locomotive may be stopped the smoke always finds its way out by one or other of the vertical flues. These flues are spaced about 15 ft. apart, and are fitted with butterfly valves which can be regulated in very cold weather, so that, while sufficient draught is maintained for carrying away the smoke, the cold air is prevented from descending into the building.

The chief difficulty presented was to reproduce this system in concrete-steel. The problem was solved by the construction of the hoods in reinforced concrete of fine quality about 35 millimetres thick, the hoods being suspended from the roof by steel bars provided with turnbuckles to permit of the necessary adjustment. The hoods discharge into vertical flues, spaced 5 metres apart, fitted with butterfly valves and finished with weather cones.

The roof proper consists of a series of beams supported by columns of concrete-steel. Fig. 154 is a half plan of the roof, showing the six bays formed by the main beams and the panels into which it is divided by the secondary beams. The columns are spaced 10 metres apart and the side frames of the roof lanterns constitute beams of 10 metres span. The height of the columns, 6 metres, was purposely kept down so as to do away with unnecessary space and thereby make more easy the maintenance of an equable temperature. Except where the lanterns occur the roof is flat, being composed of a concrete-steel slab supported by the beams, as in the case of a concrete-steel floor. The roof surface has slopes of about 1 in 30, but these were varied as occasion demanded so as to insure the flow of water towards the columns, against which rainwater pipes are fixed. It was originally the intention to utilise the interior of the concrete-steel columns instead of separate drain pipes, but the *contrôle de l'état* refused to sanction this arrangement as being contrary to precedent. Figs. 155 and 156 are longitudinal and transverse sections of the depôt which make clear the main features of the building.

The roof slab is covered with material termed "ciment ligneux" or "ciment de bois," over which is spread a layer of gravel 10 centimetres thick to protect the cement from the direct rays of the sun.

"Ciment de bois" is composed of a layer of millboard impregnated with bitumen and three layers of paper similarly treated. The millboard is first laid upon a thin bed of sand spread upon the cement surface of the flat roof, with the object of rendering the millboard capable of independent movement, so that it may be free to expand under the influence of heat; next the upper surface of the millboard is covered with bitumen, laid on hot with a brush, and on this is spread the first sheet of paper. This and the remaining sheets are covered with bitumen as in the case of the millboard, with the result that the "ciment de bois" includes four layers of bitumen, one layer of millboard, and three layers of paper.

At the sides of the lantern frames certain precautions became necessary to prevent the penetration of moisture. Strips of zinc were interposed for a distance of 15 centimetres between the millboard and the paper, and cemented by means of bitumen applied with a brush, so that the strips of metal were practically extensions of the bituminous roof covering. Each strip was bent upwards for a height of from 15 to 20 centimetres, to form flashing against the side of the lantern framing. The precise height of the zinc strips necessarily varies from case to case according to climatic conditions. For instance, on buildings situated in places where heavy falls of snow may be anticipated, the vertical returns of the zinc must be of ample height, and it may be desirable to add a supplementary strip above the first one, in order to guard against the penetration of moisture from the melting snow, especially in the case of roofs pierced by a large number of lanterns, because these are almost certain to result in the formation of deep snowdrifts.

The gutters of the depôt at Renens are constructed in reinforced cement, covered with sheet zinc, laid in such manner as to permit free expansion under the influence of heat, and bordered at the edge, or edges, as the case may be, by a light curb, which maintains the layer of gravel on top of the roof at the thickness of 10 centimetres.

The question may be asked whether it would not be possible to make watertight gutters of concrete or cement without the employment of a zinc lining. In reply, it should be said that, while gutters of comparatively small length can be so constructed without risk of leakage through the concrete, it is certainly preferable to add a lining to gutters of considerable length. In the locomotive depôt at Renens some of the gutters are 65 metres long, and, if not lined, it would be scarcely possible to insure their continuous watertightness, because if one or two cracks were produced by expansion and contraction the whole length must be regarded as leaky. Hence the most prudent course was to line the gutters with metal.

In a considerable length of guttering both the cement and the zinc should be capable of independent action under the influence of temperature changes. The adoption of the following method will enable the architect to comply with all necessary conditions. After the channel has been moulded, concrete is added where necessary to insure the proper fall; then the interior is covered with bituminised paper, over which the zinc lining is laid. The employment of paper is desirable because some brands of cement contain an excess of free lime, and should not be in direct contact with the zinc.

Small details of construction such as this are worthy of attention, as by the adoption of proper precautions it is often possible to obviate small inconveniences, which may sometimes develop into grave defects.

As previously explained, the hoods serving to collect smoke from the interior of the depôt are of concrete-steel, being formed by plates 35 millimetres thick. The vertical chimneys, also of concrete-steel, are circular in cross-section with an internal diameter of 75 centimetres, the wall of the flue being 35 millimetres thick. Each of the chimneys is fixed in a socket of concrete-steel moulded upon, and monolithic with, the roof slab. Thus, the smoke hoods and the vertical flues are not immovably fixed to the roof, but are free to slide within the sleeve joint, a condition very necessary for the avoidance of undue strain upon the concrete of the roof and the chimneys. Fig. 157 is a section in which, among other details, the construction of the hood and chimney is clearly shown.

The flat roof slab, with an area of about 2,670 square metres, is supported along the edges by a thick bed of sand and a layer of paper laid on the upper surface of the walls, the expansion joint so constituted being intended to permit lateral expansion of the concrete-steel without involving the slightest risk of injury by dilatation of the slab. This detail of construction has the effect of detracting in some measure from the monolithic character of the building as a whole, and, as a matter of fact, was insisted upon by the engineers of the railway control service. It is by no means certain that the expansion joint so designed will actually answer its intended purpose. On the contrary, in spite of the interposition of paper above the bed of sand, it is necessary that the grains of sand should be round and of uniform diameter, if they are to act after the manner of balls, or even of rollers, in a bearing. But as grains of sand are not smooth and perfectly spherical like steel balls, it is by no means improbable that the weight of the roof covering will militate against the free play intended by the designers, although to a certain extent such action may take place.

With regard to the general question of expansion, it is undoubtedly the fact that, in buildings of considerable size, movements due to dilatation of the roof covering have a tendency to cause slight cracks in the walls. These are not necessarily of serious importance, but observation shows that perceptible separation occurs at certain times at the junction of the roof and the walls.

We do not go so far as to say that the idea of providing a rolling expansion joint for the roof slab is either useless or impracticable, and merely content ourselves by ponting out the nature of the precaution taken against the risk of fissures in the depôt here described.

Fig. 158 is a section showing, to a larger scale, the construction of the smoke-collecting hoods and vertical chimneys in the depôt.

The hood descends, as already mentioned, to such depth that the upper extremity of a locomotive funnel is about 40 centimetres

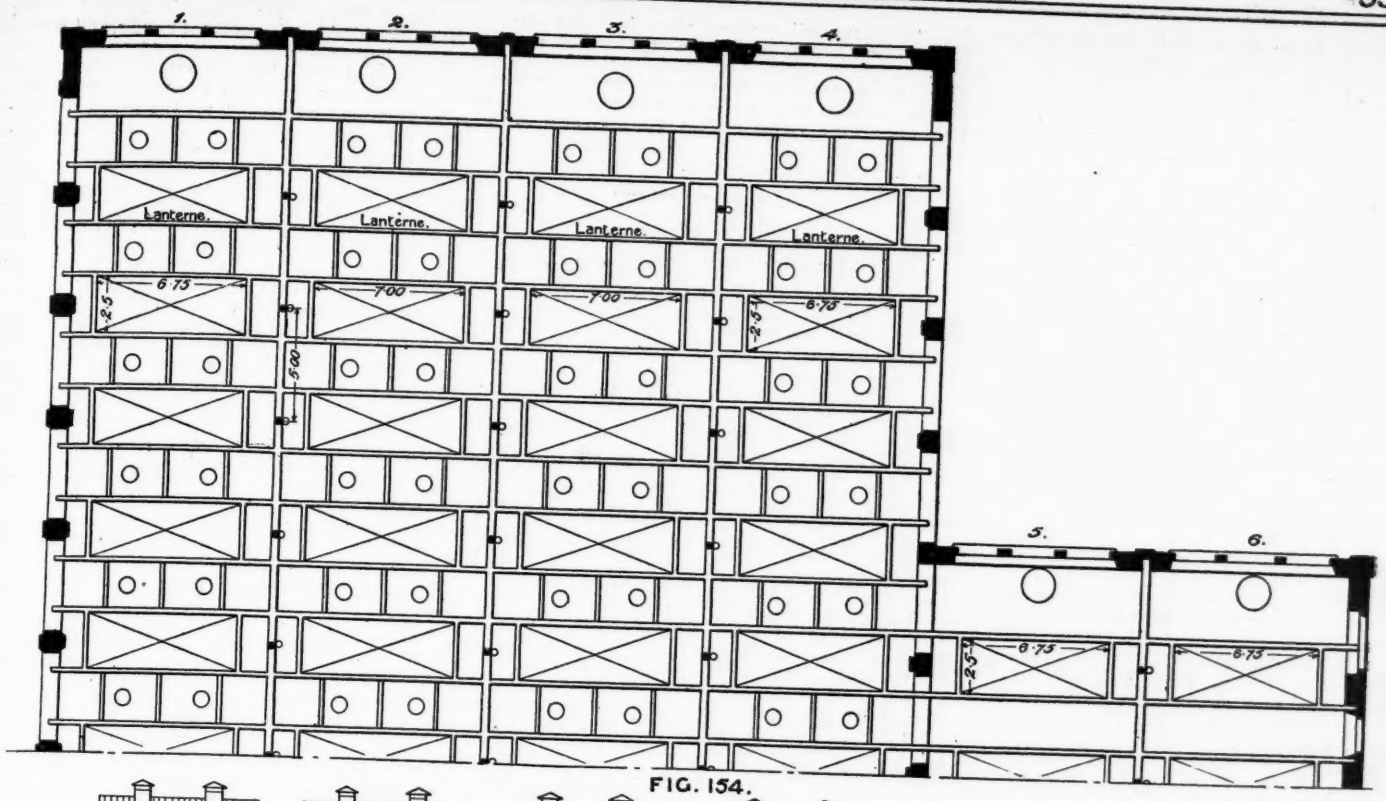


FIG. 154.

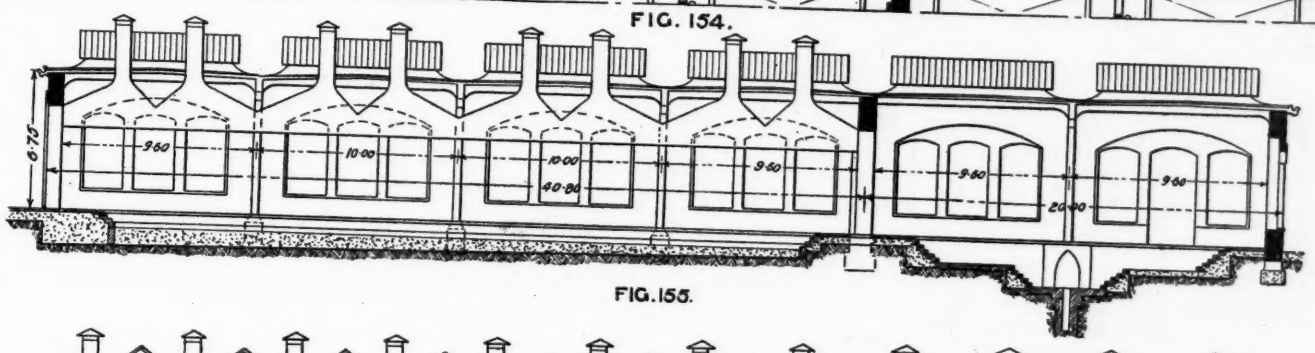


FIG. 155.

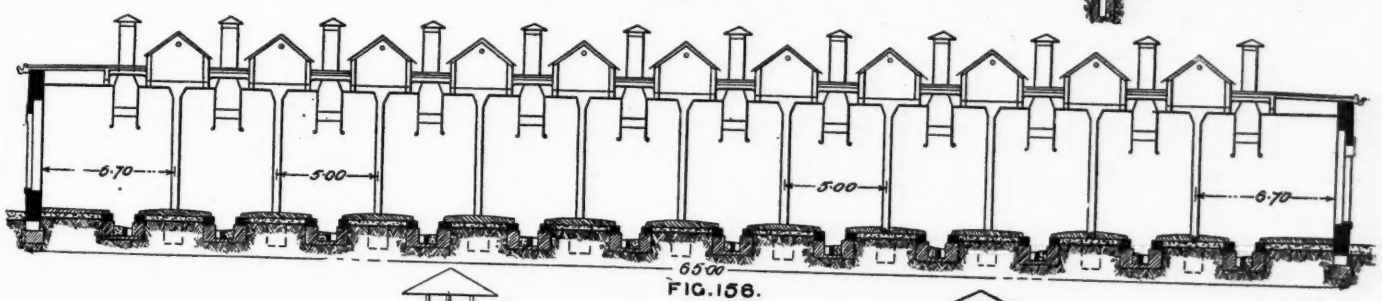


FIG. 156.

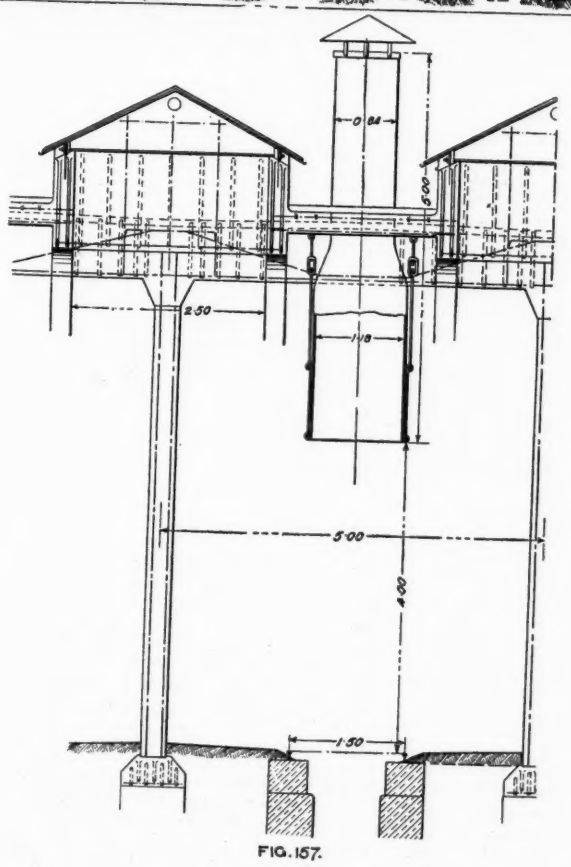


FIG. 157.

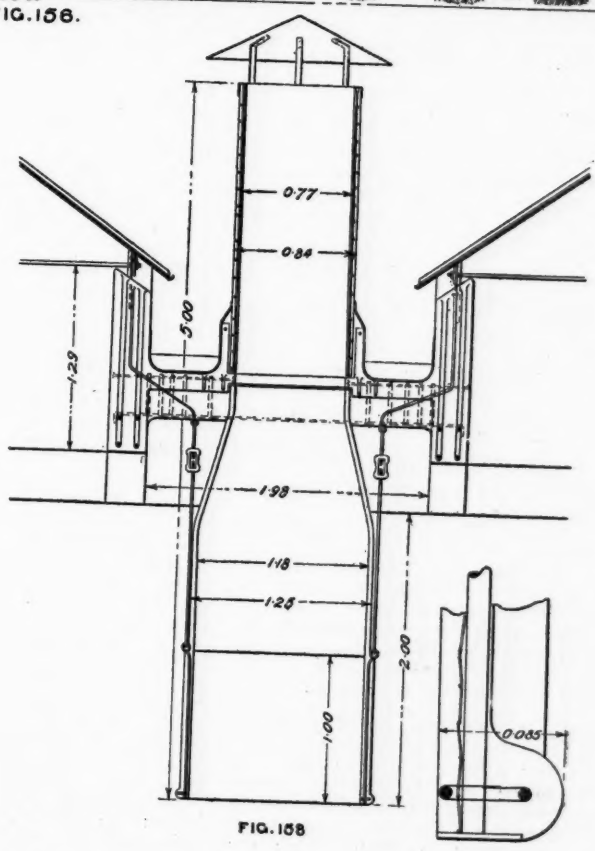


FIG. 158.

Illustrations to Student's Column.

above the lower edge of the hood, which is suspended by steel bars, and is provided with steel plates along the bottom. Above the turnbuckles, the bars are bent outwards and continued into the concrete of the lantern walls, where they are securely anchored, as shown in the section. The same drawing shows the construction of the socket forming a sleeve joint for the vertical flue. It will be seen that both portions are perfectly free to move each independently of the other. The socket projecting above the roof slab, is formed of fine concrete-steel coated with tar, over which is zinc flashing, connected with the "ciment de bois" in the manner previously indicated.

It may confidently be predicted that the system of chimney construction here described will be followed in other locomotive depôts, of which several are about to be built in different parts of Switzerland and on the federated lines of railway.

French engineers have already taken much interest in this application of concrete-steel, and we believe it to be thoroughly worthy of attention on the part of railway engineers in this country.

WESTMINSTER CITY COUNCIL.

THE usual fortnightly meeting of this Council was held on Thursday, last week, at the City Hall, Charing Cross-road.

Monmouth-court, Proposed Closing.—The Improvements Committee reported having received a letter relative to the proposal of Messrs. Hampton & Sons that they should be allowed to absorb and build over Monmouth-court on condition that they surrender certain land to the City Council, and pay the Council a sum of 1,000*l*. The Committee recommended that the Council should inform Messrs. Hamptons that they were not prepared to deal with the matter at the present time, adding that they (the Committee) understood that H.M. Office of Works considered that the National Gallery was now sufficiently isolated, and that they would derive no particular benefit from the new street which Messrs. Hampton proposed to construct and throw open as additional compensation for the closing of the court. The recommendation was agreed to.

London Building Acts (Amendment) Bill.—The Law and Parliamentary Committee reported having received various letters from public bolies, etc., in regard to this Bill. Among the letters was one from the Town Clerk of Kensington enclosing copy of the report drawn up by a committee on the recent conference of Metropolitan Local Authorities, and stating that the conference at a subsequent meeting had passed the following resolutions:—That, with reference to the communication recently addressed to the Metropolitan Local Authorities on the subject of the amendment of the Building Acts, this conference desires to reiterate the view expressed at its former meeting, that, before any amending Bill is drafted, the whole question of the administration of the Acts should be reported upon by Royal Commission, in order that the new legislation may not only provide for the consolidation as well as the amendment of the existing law, but may ensure a substantial devolution of the administration of the Acts from the central to the local authorities. That it be suggested to the Metropolitan Local Authorities that they should, in replying to the communication of the London County Council, make it clear that no Amendment Bill will be deemed satisfactory which does not provide for all administrative duties under the Acts which can be efficiently discharged by the local authorities, being transferred to those bodies in accordance with the views expressed by the Royal Commission in 1894. It was agreed, on the recommendation of the Committee, to inform the Town Clerk of Kensington that the City Council concurred in the resolutions.

Gaiety Restaurant, Alleged Infringement of Building By-laws.—The Public Health Committee reported that they had directed a letter to be sent to the persons responsible, requiring immediate compliance with the law in the case of certain water-closets at the Gaiety Restaurant, which the Committee stated had been erected in a manner contrary to the provisions of the by-laws of the London County Council.

Ventilation of Surface Boxes.—The Works Committee reported having received a letter from the Engineer-in-Chief of the General Post Office with reference to the standard types of street boxes to be used by the Post Office Telegraphs Department, which were recently approved by the Council, stating that arrangements had been made to comply with the Council's request that the covers of footway boxes should be filled in with material similar to the surrounding pavement. In regard to a suggestion contained in the letter, that ventilating pillars should be fixed in the footways for the ventilation of the boxes, the Committee recommended that the Engineer-in-Chief of the General Post Office should be informed that the Council could not entertain such a proposal. This was agreed to.

OBITUARY.

MR. DUNN.—Mr. William Henry Dunn died at his residence, No. 1, Belle Vue-terrace, Durham-road, Gateshead, on May 24, in his sixty-third year. He practised as an architect at No. 5, St. Nicholas-buildings, Newcastle-on-Tyne, under the style of Messrs. Thompson & Dunn, having continued, in Newcastle, the practice of his partner, the late Matthew Thompson. Mr. Dunn, who began his career in the comparatively obscure calling of a journeyman artificer, raised himself to a leading position amongst his fellow townsmen at Gateshead, becoming a member of the Town Council about twenty-five years ago, and subsequently an alderman of the borough; he was elected Mayor of Gateshead in 1893, and again in the following year. He made the plans and designs of the Baptist church in Heaton-road, Newcastle-on-Tyne, having a capacity of 750 persons, 1896; and of the vestry hall and school-rooms for St. Christopher's, at Walker, Northumberland, 1893. He was the architect of many schools for the Borough of Gateshead School Board, comprising the schools in Rose-street; at Teams; and those, for 750 scholars, in Kelvin-grove (1887), which he afterwards enlarged with the addition of six classrooms and a central hall, and of a junior department for more than 300 in Victoria-road. Mr. Dunn was a member of the Northern Architectural Association, and served for a term as President of that Society.

GENERAL BUILDING NEWS.

HOLY TRINITY CHURCH, DERBY.—The consecration of the new church of Holy Trinity, London-road, Derby, took place recently. The church has been erected by Messrs. Walker & Slater, builders, of Derby, the architect being Mr. Charles E. Hewitt, of Brighton. The amount of the contract, including the tower, is 9,400*l*. The building is cruciform in plan, consisting of a nave, with aisles, transepts, and apsidal chancel, and a west-end tower, which merges slightly into the nave. The vestry, with heating-chamber underneath, is situated on the south side of the chancel. The heating is carried out by a low-pressure hot-water system, this work having been entrusted to Messrs. Jerram, of Derby. The organ and choir are accommodated in an organ loft, or small west-end gallery, but the old side galleries like those in the old church have been dispensed with. The organ has been renovated by Messrs. Bevington, London. The nave arcade is surmounted by clerestory windows, and ventilation of the church is secured by means of Boyle's patent extract and inlet ventilators, in addition to the openings in the various windows. Red sand-faced bricks, with Coxbench stone dressings, are the materials supplied for facing the external walls, with Kelton and Coxbench stone dressings internally. The church will seat 800 people, and the tower rises to a height of over 100 ft. The clock has been put in by Mr. Smith, of Derby; whilst Messrs. Taylor, of Loughborough, have put in a new bell frame and rehung the bell. The electric light is the work of Mr. Edwin Haslam, of Derby, and the leaden lights for the windows were furnished by Messrs. Wheeldon, of Croydon. The floor is laid with wood blocks. All the seats are of pitch-pine, and some of the old seats have been used again. There is a new font by Jones & Willis, Birmingham, and the pulpit is the same as was used in the old church, but it has been renovated and made shorter.

HOLY TRINITY CHURCH, FERNILEE, NEAR BUXTON.—The Bishop of Southwell recently consecrated the new church dedicated to the Holy Trinity in the township of Fernilee, six miles north-west of Buxton. The plans, prepared by Messrs. P. H. Currey and C. C. Thompson, architects, of Derby, include a nave, with south aisle, and a small bell turret, as well as a chancel, with organ and vestries, and will give accommodation for 490 worshippers. At present, however, only the nave has been built, and the arches into the aisle and to the chancel have been closed with temporary walls. The style of the building is late Gothic; the walls are built of local rubble stone, the arches, window tracery, etc., being worked in Matlock stone; the roof is of pitch-pine, all woodwork being exposed to view in the interior, and left its natural colour; externally, it is covered with rough grey slates from Precelley, in South Wales; the porch is formed of oak framing, filled in with cement panels, and a temporary bell cote has been formed on its gable; the internal walls have the stonework exposed to view, but are lined to a height of 4 ft. with boarding stained green; all the internal furniture and fittings are of a temporary character. The general contractors for the building were Messrs. Fox & Goddard, of Whaley Bridge; the heating apparatus has been supplied by Mr. Isaac Beeley, of Hazelgrove; the carving on the pillars was done by Messrs. R. H. Martyn & Co., of Cheltenham; the wrought-ironwork in gas fittings, door bands, etc., has been made to the architects' designs by Messrs. Taylor, Whiting, & Taylor, of Derby.

CHURCH, LIVERPOOL.—The Church of St. Nathaniel, in the district of Windsor, Liverpool, has just been opened by the Bishop of Liverpool. The new church, which falls back a distance of some 80 yds. from the north side of the top of Upper Parliament-street, takes the place of one destroyed by fire in February, 1904. The arrangement of the east end of the church is entirely different from the plan usually adopted in modern churches, the Basilican arrangement being reproduced. The old church had a length from east to west of 105 ft., and a breadth from north to south of 61 ft., and the new church is 123 ft. long and 68 ft. 6 in. broad. The nave from the west wall to the chancel steps is 83 ft. long, with a width between the columns of 36 ft. There are north and south side aisles, each 3 ft. 6 in. wide, and a centre or nave aisle of 4 ft. 6 in. in width. The nave is divided from the side aisles by an arcade of four arches, supported on selected Peterhead granite columns. The caps and bases are of Darley Dale stone, carved and moulded. Above the nave arches there is a clearstory pierced with lancet-shaped windows, all the other windows throughout the church being of that character, but those at the east and west end are filled with tracery. The choir space is raised three steps above the nave level, and the choir stalls provide accommodation for a choir of forty-one. Round the semi-circular end of the chancel, and at the extreme east end, twenty-five stalls have been fixed. These have elaborately-carved canopies, pillars, and finials, with a sloping shingle roof over the top, the whole being executed in Dantzic oak; 4 ft. away from the east wall, and following the circular formation, there is the Communion step and Communion rail, which also extend across the chancel. The total length of Communion rail is therefore 55 ft., as against a length in most churches of about 26 ft. The materials used in the construction of the building are Edwards' red bricks and terra-cotta; pitch-pine for all the exposed timbers in the waggon-vaulted roof and the seats; and the chancel fittings, pulpit, reading-desk, lectern, choir stalls, Communion rail and Holy Table are all in oak. The church is lighted with cathedral glass, each window having in its upper portion the name of one of the seven churches of Asia Minor, while the lower portion bears a representative extract from the Epistle to that Church. For evening lighting the church has been fitted throughout with the electric light by the Liverpool Corporation. The heating is by low-pressure hot-water pipes and ventilating radiators. The contractors for the constructional works are Messrs. H. E. B. Greene & Co., Liverpool, the architects being Messrs. George Bradbury & Sons, Liverpool. The stained windows and all the leaded glazing have been executed by Messrs. Williams Brothers & Co., of Liverpool.—*Liverpool Courier.*

TRINITY PRESBYTERIAN CHURCH, NEWCASTLE-ON-TYNE.—The Trinity Presbyterian Church, Northumberland-road, which was damaged by fire in November last, has just been reopened. The work of repairing the church was immediately taken in hand, Messrs. Cackett & Burns Dick being the architects, and the renovation has now been completed at a cost of considerably over 3,000*l*. The roof, which was the most badly damaged part of the building, has been renewed in pitch-pine; there is a new pulpit in oak; there are new choir seats also in oak; and there has been an entire renewal of the seating accommodation, the material used being Oregon pine. But the structural alterations have been carried out in much the same style as formerly. The contractors were:—Mr. Wm. Nicholson, of Gosforth, for the structural work; Mr. Richardson, for the painting; Messrs. Falconer, Cross, & Co., who have entirely renewed the electric lighting installation; and Messrs. Robson & Sons, furnishings. The organ has been restored by Messrs Nicholson & Newbegin. The clerk of works was Mr. Thomas Marriner.

CONGREGATIONAL CHURCH, SUTTON-IN-ASHFIELD.—The foundation-stone of this church was laid on the 24th ult. The church occupies a prominent corner site, with a tower as a feature at the angle. The contract is let to

Mr. John Greenwood, of Mansfield, the amount being 3,982*l.* 15s. 4d. The church will accommodate 850 persons. The architects are Messrs. George Baines & Son, London.

BAPTIST CHURCH, SOUTH BANK, YORKSHIRE.—This building is about to be commenced. The contract amount is 3,234*l.*, for the church, church parlour, vestries, etc., the seating accommodation being for about 630 persons. Future schools are arranged for at the back of the site. The architects are Messrs. George Baines & R. Palmer Baines, London.

EPISCOPAL CHURCH, BURNTISLAND, N.B.—The new church for St. Serf's congregation at Burntisland has just been completed. The church, which is in the Gothic style, is of stone from Grange Quarry. The roof is left open up to the ridge inside, and is covered with red tiling outside. The contractors were:—J. Jackson & Son, mason work; J. Patterson, joiner work; J. Williamson & Son, roofing; W. Anderson, plaster and tile work; W. Barclay, the painting—all of Burntisland; Frew, Watson, & Co., Perth, the plumber work; and J. Miller, Glasgow, the glazier work. A pencil sketch plan was got from Mr. F. L. Pearson, architect, London, and handed to Mr. W. R. Simpson, architect, Burntisland, to prepare working plans and superintend the building operations. The cost of the new church is 2,300*l.* The church is seated for 200 worshippers.—*Dundee Advertiser.*

BAPTIST CHAPEL, SHIREHAMPTON.—The new Baptist chapel at Shirehampton has been opened. The estimated cost of the building was 2,044*l.*, and accommodation has been provided for a congregation of about 300. The chief entrance is from Pembroke-road, the chapel being entered through a porch, on both sides of which is a lobby. At the further end of the building are vestry-rooms and other offices. The plans were prepared by Mr. Benjamin Wakefield, of Bristol, and the work has been executed by Messrs. Biss & Sons, of Portishead. The chapel is 50 ft. by 27 ft., and the height from floor to ridge, 28 ft. The east and west walls are panelled on the inside to the height of 4 ft. 6 in., these panels being movable, so that they may be pulled out to form sixteen classrooms. The roof is an open timber one, covered with red tiles, and the floor is of pitch-pine wooden blocks. The building will be heated by the hot-air system, and the light will be incandescent gas. The baptistry is constructed of white Sicilian marble.

WESLEYAN CHAPEL, WADDINGTON, LINCOLN.—A new Wesleyan chapel and schoolroom is being erected at Waddington, at a cost of about 1,000*l.* The chapel will be 49 ft. long by 23 ft. wide, and will be seated to hold 180 persons. The schoolroom adjoining, 30 ft. by 24 ft., will communicate with the chapel by folding doors, and there will also be a vestry. The front of the chapel will be of red pressed bricks, with dressings of stone from the Waddington yard. In the principal gable will be a traceried window 14 ft. by 8 ft., and the whole building will have fifteen windows. The chapel will have an open-timbered roof, and the seats will be of pitch-pine, varnished. The plans have been prepared by Mr. J. T. Drury, of Lincoln, and the contractors are Messrs. W. & M. Halkes, of Lincoln.

PORTISHEAD NAUTICAL SCHOOL.—The nautical school at the Nore, Portishead, is nearing completion, and the Education Committee have just made a tour of inspection of the buildings. Mr. E. Gabriel is the architect, Mr. F. Cowlin the builder, and Mr. G. Crispin the sanitary engineer.

ST. PETER'S SCHOOL, YORK.—At St. Peter's School, York, was opened, on the 1st inst., the new wing which has been built to meet the scholastic demands made upon the institution. The new wing has been built on the site of the old school-house and covered play-shed, and is of red brick, with green Westmorland slated roofs. The central portion, which is taken up three stories, is covered with an asphalt flat, to which there is access by a turret staircase. The work has been carried out, at a cost of about 6,000*l.*, by Mr. T. S. Ullathorne, of Selby, from the designs and under the supervision of Mr. Brierley, architect, of York. A feature is the provision of a changing-room, fitted with foot and shower baths.

PRIMITIVE METHODIST BUILDINGS, WASHINGTON STATION.—The foundation-stones have just been laid of a new Primitive Methodist Sunday school and classroom at Washington Station. The building, when completed, will comprise a schoolroom, capable of seating 250 adults, and a smaller infants' schoolroom or C.E. hall, to hold about 50 people. The school will cover an area of 40 ft. by 19 ft., with a transept 19 ft. by 12 ft. The entrance will be from the main road, an inner vestibule leading directly into the school. The building will be faced with Pelaw pressed bricks. The plans have been prepared by Messrs. Davidson & Phillipson, architects, Newcastle, while the contractor is Mr. R. Bruce, New Washington.

CHURCH ROOM, HARROW.—The Bishop of Islington recently opened the new church room at Sudbury. The new structure holds over 200 persons, and has, at the north-east end, a small chancel. This is divided from the rest of the building by means of a metal curtain. The room was designed by Mr. Arnold Mitchell, and built by Messrs. G. & J. Waterman, of Watford, at a cost of nearly 2,000*l.* Opening out of the hall is a class-room, which will hold about thirty people. There are also a suite of caretaker's rooms, and a scullery.

PRESBYTERIAN ASSEMBLY BUILDINGS, BELFAST.—These new buildings for the Irish Presbyterian church comprise extensive offices, committee-rooms, and three large halls. The assembly hall, planned to seat 2,300 persons, has two galleries, with panelled oak fronts, and a ribbed ceiling of Oregon pine. All the walling is of County Down sandstone, with Glasgow stone dressings; internally Bath stone is extensively used. Westmorland green slates cover the roofs, and the copper crown of the large square tower, which is about 170 ft. high, was constructed by Messrs. Ewart & Son, London. The peal of twelve bells, with tenor weighing 42 cwt., was cast by Taylor & Co., Loughborough, with clock and carillon, and is worked by electricity. Messrs. Robert Corry, Ltd., are the contractors, and the architects are Messrs. Young & Mackenzie, of Belfast.

THE BANGOUR VILLAGE ASYLUM, NEAR EDINBURGH.—The official inspection by the Board of Trade Inspector, Colonel Von Donop, took place on the 17th ult. of the Bangour Railway, which has been constructed by the Edinburgh District Lunacy Board from Uphill Station to Bangour, as a convenient means of communication with the village asylum at that place, now being constructed for the reception of the pauper lunatics of the city. The railway, two and a half miles in length, has cost over 30,000*l.* It has been in operation for some time in conveying material for the buildings in course of erection at Bangour. Mr. Tait is the engineer of the railway. An informal inspection afterwards took place of the buildings at Bangour, under the direction of Mr. H. J. Blanc, the architect. For some time past there have been two hundred patients in residence, who are accommodated in four of the cheaply-constructed pavilions of wood and iron which were erected, on the instructions of the Board of Lunacy, so as to ease the pressure at the Morningside Asylum. There is a fifth pavilion, which is used as an administrative block. The large administrative block, which occupies a site on the face of the southern slope of the estate—all the buildings are so situated—is fast nearing completion. The central block, three stories in height, contains reception-rooms for patients and the necessary accommodation for the medical staff. Right and left of this accommodation for male and female patients under observation has been provided. This consists of a day or dining room, and dormitories for twenty patients on each side. From these observation wards the patients, within a few days of their admission, will be allocated to the several other pavilions suitable to their mental and physical condition. To the east and to the west of this block, two on each side, four pavilions—two for women and two for men—for acute cases, fifty in each, have been planned. In this part of the ground the hospital will be reared, and in the eastern corner, shaded by trees, the mortuary has already been built. By the side of the railway line a power station and workshops are in course of construction. This will include the boiler-room for generating steam for the whole of the village, the dynamo-rooms, workshops for the male patients, coal stores, etc.; immediately to the west is a duplicate building, containing the central kitchen and stores, with a covered way between them 27 ft. in width. The kitchen, 63 ft. by 40 ft. by 25 ft. in height—the stores being practically of similar dimensions—and its necessary offices are well arranged, and adjoining it are a bakery and cold storage. The next building, westwards, is a laundry, 70 ft. by 30 ft., with washing and drying houses, ironing-rooms, etc. Beyond this there are now in course of erection four stone pavilions, each designed for fifty female patients, capable of being industrially employed. At the present time buildings have been contracted for which will accommodate 750 patients; but all the offices, such as kitchens, laundry, etc., have been designed to meet the requirements of the full number which may be accommodated in the village—viz., 1,000 patients. Should further accommodation be required in the future, there is ground on all sides for extension. On the crest of the hill is the house of the chief medical officer. For the water supply of this village community it was necessary to construct, from plans by Mr. Tait, C.E., a reservoir on the head waters of the Broxburn at a cost of 30,000*l.* This pond is capable of containing 13½ million gallons of water, which is equal to about 80 to 100 gallons per head per day of the resident population of the village, estimated, say, at 1,200. Near to it are filter-beds, and a clear-water tank.—*Scotsman.*

INSURANCE BUILDINGS, BRISTOL.—The new buildings for the London and Lancashire Fire Insurance Company, Bristol, are situated in Corn-street. Mr. Edward Gabriel is the architect. The building now completed covers an area of 3,680 ft. super. Externally, the ground floor is executed in granite, above which Hartham Park Bath stone is used. The carving has been carried out by Mr. Gilbert Seale. Internally, the ground floor area is in the occupation of the various departments of the company, and here the walls are lined with tiles by Messrs. Craven, Dunnill, & Co., who have also executed the striking faïence mantelpieces. All the joinery is in oak, with the exception of the fittings, which are mahogany. In the basement are strongrooms and lavatory accommodation, with a warehouse in the rear part of the building. There are entrances to the upper floor offices from Corn-street, and also from Shannon-court. The staircase is of stone, the walls of which and the corridors are lined with Rust's vitreous mosaic, this material being also used for the floors of corridors and passages. An electric lift gives access to all the floors. Lavatory accommodation is provided. The whole of the work has been carried out by Mr. R. F. Ridd, under the supervision of the architect on behalf of the company.

HOUSING SCHEME, EARSWICK, YORKSHIRE.—A scheme of housing and improvement is now being carried out at Earswick, near York, on lines similar to Bournville. Two types of houses are being built so far; cottage houses, which let at 4s. 6d. a week, and "parlour" houses at 5s. 9d., exclusive of rates in each case. The cheaper cottages contain a kitchen, living-room, pantry, and three bedrooms. Messrs. Unwin & Parker are the architects responsible for the scheme.

BUILDING IN NOTTINGHAM.—The following table, showing the number of new buildings in Nottingham, has been passed by the General Works and Highways Committee of the Corporation. The number of buildings passed in the last four years was:—Year ending March 31, 1902, 2,065; year ending March 31, 1903, 2,775; year ending March 31, 1904, 2,010; year ending March 31, 1905, 1,531.

JOHNSON MEMORIAL CHURCH, BICKERSHAW.—This new church was recently consecrated. The church is on a site in Bickershaw-lane, adjoining the schools belonging to the Abram Collieries, and it provides seating accommodation for over 200 persons. The chancel is separated from the nave by a large chancel arch, with a low curb wall, designed to receive chancel screen, and the chancel floor is enriched with encaustic tiles; choir benches, with carved ends and fronts, are also provided. The building throughout is lighted by electricity. The vestries are on the north side, with separate entrance for the use of clergy and choir, and separated from the chancel by an arch and ornamental screen. The pulpit is of oak, and the font is of red Rainhill stone. A bell has been placed in the ornamental stone belfry, which has been erected on the main roof over the chancel arch. The whole of the work has been carried out from the designs and under the supervision of Mr. Frank Freeman, architect, Bolton, Messrs. Moore Brothers, of Rawtenstall, being the contractors, Mr. Henry Molyneux, of Abram Collieries, acting as clerk of works.

NEW OFFICES, WESTMINSTER.—A building, consisting of a block of offices and business premises, to be called "Parliament-chambers," and facing the Church House, Great Smith-street, Westminster, is now being completed for Mr. E. J. Read, of the London Banking Corporation. The property consists of over 100 offices. The entrance-halls are panelled with Irish green and black Devonshire marble, and the steps are of white Sicilian marble. The elevation is carried out in red bricks, with carved gauged work, and tawny terra-cotta dressings. Messrs. L. Whitehead & Co. are the builders, Messrs. Palgrave & Co. architects, and Mr. Farrell their clerk of works.

NEW FLATS, WIMBLEDON.—A new building is to be erected at the corner of Belvedere-grove and Courthope-road, Wimbledon Hill, to be called "Clifford House," and to consist of high-class residential flats. Messrs. R. Ward & Son, Battersea, are the contractors, and Messrs. Palgrave & Co. are the architects.

NEW CHURCH, FISHPONDS, BRISTOL.—The first section of All Saints, Fishponds, was opened by the Bishop of Bristol on the 26th ult. The style is that of the XIVth

century, and the portion so far constructed includes chancel, morning chapel, two vestries, organ-chambers, south-east porch, and the first of six bays of nave and aisles, the whole of which will ultimately seat 700 people. The walls are of rock-faced and level-bedded local stone, lined with adamant plaster, with windows and dressings, generally of Hastham Park stone, with polished Belgian marble and blue Rennant shafts for the various internal columns, with profuse natural foliage carving in their caps and elsewhere. The roofs are of open-timber description, boarded, felted, and covered with brown and red mixed Broseley tiles. The floors of chancel and porch are laid with terayo marble mosaic, and the gangways with oak wood blocks. The contractors were Messrs. Clarke & Sons, of Fishponds, and the architects Messrs. E. H. Lingen Barker & Son, of London, Bristol, and Hereford.

STAINED GLASS AND DECORATION.

ST. MARGARET'S, WESTMINSTER.—Canon Henson, Chairman of the Restoration Committee, writes to the *Times* of Wednesday, making an appeal in reference to the work of internal restoration which is projected at St. Margaret's Church, and especially in regard to the great east window. He says that the Committee are advised that the window needs to be taken out and releaded, and that unless the work is undertaken without delay the glass will suffer. It has been decided at the same time to undertake the renovation of the east end of the church, and to entrust the work to Mr. C. E. Kempe. The Committee will be able to acquire from His Majesty's Office of Works possession of the narrow strip of ground which separates the wall of the church from the railings, and it is proposed to utilise the additional space. Accordingly, the new east wall will be built a little eastward of the present wall, giving a slightly greater length to the chancel. The cost of the work will be about 3,000*l.*, and an appeal is made for financial assistance.

CHANCEL SCREEN AND LECTERN, CHRIST CHURCH, CARLISLE.—The Bishop of Barrow-in-Furness recently dedicated the chancel screen and lectern which have been erected in Christ Church, Carlisle, as a memorial to the late Rev. J. C. Butterworth. The screen has been carried out in oak from the designs of Mr. J. H. Martindale, Carlisle. The lectern has a movable bookboard in the form of an open volume which works in quadrants, and can thus be adjusted to the light. The pilasters have carved terminals, and the frieze is carved over each tracery panel, included in the design at the front being the symbols I.H.S., X.P., and Alpha and Omega, whilst over the panels on the return at the steps are chiselled cherub heads. The whole of the work has been carried out by Mr. Hetherington, Carlisle, who was responsible for the carving; the executors of the late Mr. J. H. Reed did the oak work; and Messrs. J. & R. Bell were the contractors for the stone base.

STAINED-GLASS WINDOWS.—At Holy Trinity Church, Southwark, a large stained-glass window, representing the Nativity, has been placed, with a brass memorial inscription beneath it. The window was executed in the studio of Messrs. Bacon & Brothers, who have also just erected a single-light window in St. Saviour's, Wood Green, of which the subject is Christ in Majesty.

SANITARY AND ENGINEERING NEWS.

FAIRBURN WATER SUPPLY.—The new water supply for the village of Fairburn, near Pontefract, which has been carried out at a cost of 3,000*l.* from plans prepared by Mr. J. Waugh, C.E., of Bradford, was formally turned on by Mr. J. T. Addy, the representative of the parish on the Pontefract Rural District Council, who received from Mr. Waugh as a souvenir of the occasion a silver flask suitably inscribed. The supply is obtained from what are known as the Gadmire Springs, which are leased at a nominal rent from the Wesley Trustees; the flow from these varies from 150,000 gallons to 1,000,000 gallons per day, and, as Fairburn's population is only 800, the quantity required will absorb only a small proportion of the minimum. The works have been carried out by Mr. J. W. Broadhead, the contractor, and consist of a reservoir of 100,000 gallons, a pumping-station, oil-engine, and pumps, and about two miles of mains.

BELGRAVE SEWAGE PUMPING STATION, LEICESTER.—The formal opening ceremony of the new Belgrave sewage pumping station on the Melton-road, Leicester, took place recently. The works form part of an extensive scheme, and comprise preliminary clarification of the whole of the sewage of the borough by bacterial treatment at the Beaumont Leys Farm, with its subsequent and final purification on the land; also new sewers and storm outfall works for the whole of the Belgrave district, the abolition of the Belgrave sewage farm, and the construction of this new pumping station and the rising main to deliver the Belgrave sewage to Beaumont Leys Farm for bacterial and land treatment. The estimate for the whole scheme was 167,841*l.* Of this amount about 86,000*l.* was provided for sewerage and sewage disposal works for the Belgrave district. When completed, about nine miles of new sewers will have been laid, which will replace about the same length of old defective sewers. The sewage from a population of about 11,000 will be discharged through the new sewers to the pumping station, representing a volume in dry weather of nearly 400,000 gallons a day. From the pumping station now opened the sewage is delivered through a 15-in. diameter cast-iron rising main, nearly two miles long, to the Beaumont Leys Farm, a rise of about 174 ft., where it joins the sewage from the Abbey-lane main sewage pumping station. Measures have been taken to safeguard the district from nuisance arising from the works, and it will be impossible for any back watering or flooding from the sewers to again take place in the low-lying parts of Belgrave. The new buildings comprise an engine-house, boiler-house, workshop, and chimney-shaft, 120 ft. high. A weigh office has also been built, and a house for the superintendent is now in course of construction. A fence wall is being built on the eastern boundary of the land, and a belt of trees, 20 ft. wide, will be planted on the eastern and southern boundaries of the site. The bulk of the foundations are 27 ft. below the normal level of the river. Mr. E. G. Mawbey is the Borough Surveyor and Engineer, and Messrs. Summers & Scott, Ltd., Gloucester, were the contractors.

THE WIDENING OF UNION BRIDGE, ABERDEEN.—A meeting of the Improvements Committee of the Aberdeen Town Council was held on the 29th ult., when the proposal to widen Union Bridge was again considered. It was decided to request Sir Benjamin Baker to visit Aberdeen, inspect the bridge, and advise the Council before it is decided whether to widen the bridge by granite masonry or simply by throwing out steel girders on either side to support a pavement for pedestrians. There was a majority of opinion in the committee that the widening should be done by masonry if possible.

THE ROYAL SANITARY INSTITUTE.—At an examination in sanitary science as applied to buildings and public works, held in Leeds, June 2 and 3, 1905, one candidate presented himself, Mr. S. S. Rusby (Huddersfield), to whom a certificate was granted. At an examination in hygiene in its bearing on school life, held in Leeds, on June 2 and 3, 1905, twenty-eight candidates presented themselves—ten for Part I., and eighteen for the whole examination. The following twelve candidates were awarded certificates:—Miss S. L. Armitage (Dewsbury); Miss A. M. V. Badock (Leigh); F. Barraclough (Leeds); T. E. Butler (Leeds); Miss R. H. Haggas (Keighley); Miss N. King (Wakefield); Miss F. Kirk (Bradford); Miss S. W. Limont (Burnley); E. Ralphs (Appley Bridge); F. C. Tankard (Bradford); Miss A. Taylor (Wakefield); Miss J. E. Tolson (Dewsbury). The following nine candidates were successful in Part I. of above examination:—Miss M. A. Chappell (Barnsley); T. Clegg (Elland); Miss M. Daken (Liverpool); A. Longbottom (Bradford); W. Kidd (Leeds); T. Oldfield (Knaresborough); Miss F. E. Relf (Shipley); Miss F. Rowbotham (Darton); W. J. Woodruff (Skipton).

FOREIGN.

FRANCE.—A monument has been erected in the Avenue de l'Observatoire, Paris, near the lying-in hospital, to the memory of Dr. Tarnier.——The Académie of Amiens has opened a subscription to raise a monument in that town to Jules Verne.——The eleventh local art exhibition has been opened at Pontoise.——An asylum for the aged has been opened at Courbevoie, of which M. Tronchet is the architect.——A competition has been opened at Limoux for the building of an upper-class primary school.——M. André, Grand Prix de Rome, has been appointed architect to the Service Municipale at Paris, in place of the late M. Cavel.——MM. Allignet and Loiseau are the architects for important school buildings in progress at Vanves and at Boulogne-sur-Seine.——By a Government decree of May 27 M. Léon Bonnat has been appointed Director of the Ecole Nationale des Beaux-Arts for a period of five years.——The death is announced of M. Blanc, architect, Inspecteur des Bâtiments Civils, and specially attached to the Institut and the Cour de Cassation.——The decease is announced, at Tours, of M. Henri Prath, a member of the Société Centrale des Architects. M. Prath, who was 58 years of age, had been brought up in the Atelier André and at the Ecole des Beaux-Arts. He was the architect of various schools at Tours and at Château-Renaulf, and also of the Ecoles Normales at Loches and at Tours.——M. Eugene Danfoy, architecte-en-chef in the Department of Monuments Historiques and of Edifices Diocesains, has died at Paris, at the age of 67. He was a pupil of his father and of Questel. He was successively in charge of the dioceses of Avignon, Orléans, and Tulle. In 1889 he obtained the Grande Medaille of the Société Centrale, founded to encourage studies on French architectural monuments.

GERMANY.—The Society of German Engineers will hold its annual meeting at Magdeburg on June 19 to 22.——In Ratisbon, when a house was pulled down in St. George's-place, some interesting remains of a wall were discovered that must have belonged to the Castra Regina erected in the time of Marcus Aurelius, 179 A.D.; remains of a statue were also found, of a female figure of which the head and shoulders are missing, and which has been conjectured, from what is left of the inscription, to represent Agnes of Poitiers, the wife of Emperor Henry III.——The new building for students of mechanics, built in connexion with the Dresden Technical Schools by the architect, Professor Weissbach, was opened on May 27.

PORT OF ANTWERP IMPROVEMENTS.—At a recent meeting of the Conservators of the River Thames, arrangements were made for a visit by members of the Board, during the current month, to Antwerp, Rotterdam, and Hamburg, to inspect the new works for the improvement of the Port of Antwerp, which it is estimated will be completed in ten years' time at an outlay of about eight millions sterling. The projected improvements comprise a river channel, four and a quarter miles long, from Kruisschans to Austruweel to provide riverside quays and quay-space extending over eight miles; the construction of two dams at the upper and lower ends, respectively, of the bend to be superseded by the new river channel, with a short canal and locks joining the main river and the northern end of the enclosed bend; and a dock canal, having at its northern end three parallel locks, 984 ft. by 98 ft. and 26 ft. deep at low water, to communicate with the river at Kruisschans. The dock canal, five miles in length and 820 ft. in width, is to join the new docks now being built, and will have nine open transverse docks, 3,936 ft. by 556 ft., with a water depth of 39 ft.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. A. E. Carey, M.Inst.C.E., has acquired the practice of the late Mr. William Jaffrey, which he will carry on at the same address, 3, Victoria-street, S.W.——Messrs. R. J. Nicholson & Co., 26, Cannon-street, Manchester, have been appointed sole agents in Manchester and the district for Messrs. Joseph Richmond & Co.'s lifts and cranes.

PROPOSED RECONSTRUCTION OF THE TOWN HOUSE, ABERDEEN.—The sub-committee of the Finance Committee of the Aberdeen Town Council, charged with the scheme for the reconstruction of the Townhouse Buildings, met on the 18th ult., when the plans, prepared by the Burgh Surveyor, following the elevation prepared on a previous occasion by Mr. A. Marshall Mackenzie, A.R.S.A., were submitted. The sub-committee agreed to report the plans simpliciter to the Finance Committee, with the statement that the plans now prepared meet the requirements of the various departments of the Town Council. Under the scheme, the proposal is to take down the north wing of the townhouse and set it back so that the line, when projected to Queen-street, would run in line with the railing of the Marischal College Buildings. Offices for the public rates and gas departments would be provided in the wing facing Broad-street, while the City Chamberlain and his staff would be accommodated on the first floor, and the Town Clerk's department on the floor above. The front portion of the Municipal Buildings to Union-street would also require to be reconstructed. The ground floor is intended to be occupied by the Tramway Department, and the first floor by the Public Health Department. On the next floor it is proposed to enlarge the town hall—to form a hall, with rooms for the use of the councillors and committees. The estimated cost of the scheme is about 35,000*l.* This sum is exclusive of the cost of the acquisition of the Society of Advocates' Hall and other property in Broad-street. In the event of the Council purchasing

the Advocates' Hall, the Burgh Surveyor's staff would be accommodated in that building when reconstructed.

CHANCEL SCREEN, ILSHAM.—Ilsham St. Matthias Church, Torquay, was erected half a century ago from the designs of the late Mr. Salvin, a London architect. In 1895 alterations and additions were made by the late Mr. J. L. Pearson, R.A. A clearstory was put in and covered with an open-timbered roof, and the body of the fabric was fitted with oak benches, and now a new chancel screen has been erected from the designs of Mr. Charles Forster Hayward, F.S.A. The work of erection was entrusted to Messrs. A. B. Hayward and D. C. Maynard, architects, of London. Supported upon stone corbels from each side, the arch beneath the great rood beam is carried upon the out-stretched wings of sculptured angels, nearly life size, and whose pinions, from tip to tip extended, measure 15 ft. In the centre of the beam is a Calvary cross, bearing upon its upper part a crown of glory, whilst beneath is carved a descending dove. Above the cross is a projecting canopy head, ogee in outline, crocketted, and terminating with a carved finial. Springing up from the beam and covering all the eastern end of the edifice above is tracery of XVth century Gothic type, whilst below occur, upon the northern side, the pelican in her piety, and upon the north a cross with foliated ends, upon which is a circle composed of three fishes. The carrying out of the work was entrusted to Messrs. Harry Hems & Sons, Exeter.

SHOREDITCH TOWN HALL.—The Shoreditch Borough Council have appointed Mr. Alfred W. S. Cross as architect for the restoration of the town hall, recently injured by fire. The town hall was built in 1900-1 by Messrs. Killby & Gayford, after Mr. William G. Hunt's plans and designs, which were chosen in a limited competition, and are illustrated in our number of October 19, 1901. The general design of the façade was brought into consonance with the architectural outline of the adjacent and older vestry hall. The fire broke out in the early morning of August 15, 1904, destroying the whole of the roof, and the interior of the council chamber. The structural reparation will cost an estimated sum of nearly 20,000*l*.

THE CHEAP COTTAGES EXHIBITION.—This Exhibition has received from the Board of Trade a certificate as an Industrial and International Exhibition. If, therefore, exhibitors give notice to the Comptroller, they can avail themselves of the protection afforded by the Patents, Designs, and Trade Marks Act, 1883, for any inventions, designs, etc., which they may exhibit.

BUILDING BY-LAWS, PUDSEY.—A meeting of the members of the Pudsey Town Council was held on the 31st ult., the Mayor (Alderman Forrest) presiding, when Alderman Webster proposed that the revised building by-laws be approved. These would, he said, make it easier for builders to erect houses and shops at a paying price. The main alterations were in reducing the strength of timbers, easing the conditions for lock-up shops, and providing that the height of rooms should be not less than 8 ft., instead of 9 ft. Mr. Gaunt seconded the motion.—Mr. Halliday opposed the new provisions relating to timbers and height of rooms. It was better, he said, to err on the right side, and the Council would perhaps rue when it was too late.—Alderman Walker pointed out that these two provisions had been inserted by the Local Government Board.—Mr. Keighley expressed regret that the Council had not obtained the power to erect scullery houses that could be let at about 4s. 6d. per week. Leeds was erecting large numbers of such houses, and people were leaving Pudsey to live in them. The by-laws were approved.

TESTS OF FIRE GRATES.—We are requested to announce that the Commissioners of H.M. Works intend, with the assistance of the Coal Smoke Abatement Society, to carry out during next autumn a series of tests of open domestic fire grates. Manufacturers who may be desirous of having stoves tried should send full particulars thereof addressed to The Secretary, H.M. Office of Works, London, S.W., on receipt of which the Commissioners will determine whether such stoves shall be submitted to tests. Applications must be received not later than July 7 next.

BRITISH FIRE PREVENTION COMMITTEE.—Mr. Oswald C. Wylson, F.R.I.B.A., has been elected a member of the Executive of the British Five Prevention Committee, vice Mr. Ellis Pritchett, F.R.I.B.A., deceased. Lieut.-Colonel Winn, R.E., Mr. Walmisley, M.Inst.C.E., and Mr. Frank Macey, architect, have been elected to seats on the General Testing Arrangements Sub-Committee. The first fire tests at the British Fire Prevention Committee's new testing station will be conducted on Wednesday, June 28, and there will probably be a private view of the testing station prior to the tests. In addition to the tests already announced, a test is to take place in respect to protective coverings to stanchions, the protective coverings being constructed by Messrs. Jabez Thompson, of Northwich. An arrangement has been made by the Committee with the Associated Portland Cement Manufacturers, Ltd., for systematically testing the fire resistance of various aggregates of cement concrete, and a special announcement will shortly be made as to the aggregates that will be under review.

BUILDERS' EXCHANGE, BIRMINGHAM.—Work in connexion with the Builders' Exchange and Exhibition, Birmingham, is progressing favourably; the opening day is fixed for June 29, and should find all in readiness for the display of nearly every conceivable material and appliance required in the building of houses and factories. The motto of the exchange is "A house is not finished until it is furnished," and, in furtherance of this view, complete schemes of furnishing houses and offices will be shown. A system has been arranged whereby immediate reference may be made to the most important catalogues of leading firms concerned in the erection and equipment of buildings, and a plan has been adopted to keep the library of catalogues supplied with all the newest publications. The following are among the firms who are exhibiting:—Messrs. Mellowes & Co., Ltd. (Sheffield); The Wood Carving Company (Birmingham); Hamblett's Blue Brick Company (West Bromwich); Messrs. Phillips & Sons (Birmingham); The Cannon Iron Company (Deepfields); The Perfector Window Company, Ltd. (Nottingham); Messrs. English Brothers (Wisbech); The Haunchwood Brick and Tile Company (Nuneaton); Messrs. Yarrow & Co. (Bolton); Mr. Albert J. Shingleton (London); The Fire Resisting Corporation (London); Messrs. Kenrick & Jefferson (West Bromwich); Kodak, Ltd. (London); Messrs. Maw & Co. (Jackfield); Messrs. Kaye & Co. (Rugby); The Cloisonné Glass Company (London); Messrs. Samuel Platt (Wednesbury); Mr. Geo. Farmiloe (London).

CAPITAL AND LABOUR.

NEWCASTLE BUILDING TRADE DISPUTE.—Some misunderstanding appears to have arisen with the labourers on strike in Newcastle and district as to the proposals of the masters. They had expected to receive these direct from the employers after the meeting of the latter on Friday, last week, but have not done so. However, it appears they have received a letter from Mr. Leeson, in which were stated the suggestions of the employers, and they are now inquiring whether this is meant to be the official communication. In this letter, as has been already stated, the employers ask for a reduction of ½d. per hour; or, failing that, that the men should accept the old rate of 6½d., and refer the whole matter to arbitration. When the labourers hear that these are the official terms they will proceed to ballot on them. We are informed that, as a matter of fact, the labourers and the masters have already, at their conference, practically come to an agreement on the working conditions, and the real question now at issue is that of wages. This appears also to be the chief matter in dispute with the plasterers and bricklayers. We also understand that, should the plasterers return to work, they will request that all the men who have been employed in their trade during the strike shall be discharged.—The masons have returned to work, having effectually settled their differences with the employers. As a result of a conference between the masters and the joiners, mutually satisfactory terms have been decided upon. At the meeting Mr. Stephen Eastern presided, and, after a somewhat prolonged discussion, concessions were made by each side. A reduction of ½d. an hour was agreed to, so that the joiners' wage is 9½d. per hour, and equal to that which the masons have accepted. Several other matters were also dealt with, but in each a compromise was arrived at, and thus two of the five trades concerned have definitely settled matters.—*Newcastle Chronicle.*

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

15,650 of 1904.—S. SAUNDERS: *Ventilators.*

A ventilator, consisting of a fixed half having a bearing, a sliding half provided with a spindle or part engaging with the bearing, such sliding half having also a web or flange or guides guiding the in-and-out movements of the sliding half relative to the fixed half, the said bearing being cored out for the spindle way and having a thin tube or liner of brass or other anti-friction metal smaller in diameter than the bore in the bearing, and an annular space between the liner and the bore filled with lead.

21,826 of 1904.—D. F. AINSLIE: *Window Sash Fittings.*

Window sash fittings, consisting of a plate suspended to the sash cord, and carrying a locking bolt, a keeper secured in the parting bead groove, and a disengager secured on the sash style, a guide, temporary hinges, a pivot, a movable plug for operating the same, and metal-lined holes in the sash and pulley styles, said movable plug secured to the end of the sash cord, and formed with a notched disc and connecting stem in combination with a key.

28,871 of 1904.—O. H. SCHWARZ: *Flooring Blocks, or Slabs for Building Purposes.*

Flooring slabs so made that, after they have been laid in pairs between the iron girders, each slab will lie with its outer side on the lower flange of a girder, while its inner crown ridge will lie in such a way that the two slabs bear against each other, and are able to sustain weight, such slab being made with a hollowed part on its upper side and with cross-strengthening ribs made in one piece with the slab, a crown-piece furnished with a hollow which enables the two slabs of a pair to be set in from above, and after the two have been thus set in, the hollow of the one slab with the corresponding hollow of the other slab forms, on the underside, a groove which can be made tight with a filling of cement.

2,591 of 1904.—D. ROBINSON: *Ventilators.*

A ventilator, consisting in the combination of a hollow spherical body having oppositely-disposed circular side openings, a piping to which it is attached, which projects up into said body, a cross-bar passing through said body and suitably supported therein, the ends of which project from the side openings thereof, and circular concavo-convex weather-guards or shields supported by said cross-bar in front of said side openings, but sufficiently removed therefrom to provide exit passages.

11,382 of 1904.—E. HANCOX: *Girders or Beams.*

This invention relates to the construction of girders or beams, and other structures of a like nature, and are built up of sections or units, of metal plates having thickened or double-flanged edges, or projecting parts thereof, and connected together by strips of metal or sections having suitable grooves or channels provided for receiving and gripping the thickened edges or projecting parts of the metal plates. Having thus brought the grooves or channel-shaped sections and the thickened edges of the plates together, the arms, outer edges, or lips of the said grooved or channel-shaped sections are then bent down behind the projecting parts or thickened edges of the plates, and in this manner form a strong and durable connexion of the various parts.

15,042 of 1904.—G. NEWHOUSE: *Apparatus for Applying the Smoke Test to Drains and the like.*

Apparatus for applying the smoke test to drains and the like, comprising a smoke chamber surrounded by a water-jacket, and having below a false bottom for smoke-producing material, an air compresser mounted on the jacket, and arranged to supply air to the underside of said perforated false bottom to the smoke chamber, and a handle or sling secured upon the jacket whereby the apparatus may be carried, a non-return valve to and a coned outlet from said chamber, and a perforated support in said chamber.

15,645 of 1904.—J. DOUGLAS and W. CHRISTIE: *Adjustable Shore or Strut for Use in Supporting the Sides of Earth Trenches and the like Excavations while under Construction.*

This invention relates to an apparatus for use in supporting the sides of earth trenches and the like excavations while under construction. The principal object of the invention is to provide a portable and adjustable apparatus for the purpose, for use in place of the ordinary wood shores or struts. According to the invention shores are provided that can be used over and over again and that can be quickly adjusted to any reasonably-desired length, corresponding to the width between the sides of the trench, and simply fixed in place, and as easily disconnected for use elsewhere. The apparatus consists mainly of a tube, in each end of which is fitted a sliding rod or piston. The rod at one end of the tube can be adjusted lengthwise therein so as to project more or less from the end of the

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

tube, and can be fixed in the desired position by passing a pin through the sides of the tube, and any one of a number of holes provided in the rod, at convenient distances apart for the purpose. The sliding rod at the other end of the tube is moved in and out of same by means of a lever pivoted on the top of the tube, and the lower sash-arm of the lever engages with this rod in the tube, so that upon manipulating the lever handle the rod is slid in and out of the tube as desired. This rod is provided with a toothed rack, and a pawl mounted on the tube is arranged to engage with the rack, so as to hold the rod in the required position. The outer end of each sliding rod is provided with a pawl, the face of which is spiked.

17,870 of 1904.—S. ELMES: *Artificial Stone, Plaster, or Plastic Material.*

This invention relates to the manufacture of artificial stone, plaster, plastic material for building purposes. The object of the invention is to produce a material which shall represent as nearly as possible the natural stone, and for this purpose alabaster powder is combined with powdered or ground natural stone in approximately the proportions of three parts of plaster to one part of powdered stone. To this mixture a small percentage of borax or alum is added for hardening purposes.

23,880 of 1904.—J. W. SHORE: *Machines for Manufacturing Hollow Building Blocks.*

A machine for forming building blocks, consisting in the combination with a support, a frame journaled thereon embodying the open bottom and a vertically extending side, a mould-box side-piece supported on the side of the frame, and a mould-box bottom arranged in the open bottom of the frame and provided with projections adapted to engage therewith, a clamping device adapted to secure the bottom to the frame, a second mould-box journaled on the bottom, and stops for limiting its outward movement, and boards co-operating with the side-pieces and locking devices for holding the parts of the mould-box in operative position.

5,157 of 1905.—J. J. DENNIS and E. T. FILER: *Scaffold Bracket.*

This invention relates to a scaffold bracket suitable particularly for the use of painters, paperhangers, and the like, and has for its object to provide a simple and effective bracket which can be used to support a staging board at any height desired. The bracket comprises a rectangular frame formed of side bars and an end plate. Between the side bars, and extending from one plate to the other, is the middle bar. These bars are preferably angular in cross-section, and the whole device is preferably cast or made in one piece. The middle bar occupies a plane somewhat lower than the side bars, the end plates being curved to accommodate the same. One of the side bars has teeth at its inner edge thereof. These teeth project at the ends of the bar, only the middle portion of the bar being plain or not touched. The edge of the middle bar is similarly toothed, and has a plain middle space. The teeth so arranged are adapted to engage in and support the bracket on a plank or upright, a wide plank being most suitable for the purpose. The plank is inserted between the teeth on the respective bars, and weight or pressure on the bar will cause the teeth to engage the plank and hold the bracket at the place set.

5,854 of 1905.—J. G. F. LUND: *Building Blocks with Metal Skeletons.*

This relates to moulded or pressed hollow construction blocks, and consists in placing iron bands or wires outside the construction mass in such a manner that the shearing stresses appearing in the tongue and groove projections are transmitted as tension to the main flanges of the blocks by means of the iron parts. One iron band is carried from the bottom edge of the tongue through the upper main flange to the bottom edge of the lower groove projection, and the next iron band is carried from the upper edge of the tongue through the lower main flange to the top edge of the upper groove projection.

6,355 of 1905.—K. PITROWSKI: *Hollow Clay Bricks or Artificial Stones, and the like.*

This invention relates to hollow bricks or artificial stones of any size in the shape of headers and stretchers which are provided with hollow spaces or channels running through them in a horizontal direction, and being provided on the end faces, between the horizontal channels, with grooves which face each other in the bond and form vertical channels, which are filled with mortar for the purpose of making the masonry air and water tight, and preventing the mortar from entering the channels.

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 19.—By DYER, SON, & HILTON (at Lewisham).

Catford.—39, Silvermere-rd. (s.), f., y.r. 36*l*... £585
23 and 25, Nelgrade-rd., f., y r. 56*l*. 750
101 and 103, Bradgate-rd., f., w.r. 57*l*. 4s. 590
Lewisham.—60, Ellerdale-st., u.t. 65 yrs., g.r. 3*l*., y.r. 26*l*. 255
38, Thurston-rd., u.t. 58 yrs., g.r. 2*l*. 10*l*., y.r. 22*l*. 225
Lee.—8 and 14, Eton-gr., u.t. 21 yrs., g.r. 9*l*., y.r. 68*l*. 400
Blackheath.—4, South-vale, u.t. 53 yrs., g.r. 6*l*., e.r. 38*l*. 280

May 25.—By ALEX. MOSSMAN (at Uxbridge).

Hayes, Middx.—"Rosedale Farm," 4 a. 1 r. 22 p., f., p. 1,775
Uxbridge, Middx.—Bridge-rd., "Dunstable" and "Leighton" Villas (four), f., w.r. 88*l*. 8s. 1,190

May 29.—By F. ELLEN & SON.

Brimpton, Berks.—"Brimpton Common Farm," 81 a. 0 r. 18 p., f. 2,000

By ELLIOTT, SON, & BOYTON.

Marylebone.—24, Nottingham-pl., u.t. 41 yrs., g.r. 36*l*., y.r. 233*l*. 2,550

By GIDDY & GIDDY.

Cholsey, Berks.—"Mill Court Estate," 42 a. 3 r. 6 p., f. 12,000
Maidenhead Thicket, Berks.—Pinkneys Green, "Fernhurst" and 7½ a., f. 3,600

By KEMSLEYS'.

Spitalfields.—17 and 18, Freeman-st., f., w.r. 85*l*. 16s. 1,080
4, Palmer-st., f., w.r. 42*l*. 18s. 540

By MATTHEWS, MATTHEWS, & GOODMAN.

Battersea.—254, Lavender-hill (s.), u.t. 81 yrs., g.r. 27*l*. 10s., y.r. 155*l*. 2,100

By MERVIN & ADAMS.

Clapton.—2, 4, 6, and 8, Maclaren-st., u.t. 75 yrs., g.r. 20*l*., w.r. 110*l*. 10s. 530

By SEDGWICK, SON, & WEALL.

Willesden.—Lansdowne-gr., f.g. rents 24*l*., reversion in 81 yrs. 585

By F. VARLEY & SON.

Paddington.—1, 2, and 3, Goldney-pl. (factory), u.t. 57½ yrs., g r. 10*l*., e.r. 100*l*. (including plant and machinery) 700
Tottenham.—1, 2, and 3, Ely-pl., u.t. 40 yrs., g.r. 30*l*., y.r. 105*l*. 8s. 500

By WESTON & SONS.

Stockwell.—30, 34, and 36, Sidney-rd., u.t. 37 yrs., g.r. 13*l*. 10s., y.r. 102*l*. 750
7, 8, and 9, Herbert-rd., u.t. 46 yrs., g.r. 18*l*. 19s. 6d., y.r. 116*l*. 1,035
Brixton.—1 and 3, Burton-rd., y.r. 90*l*., also i.g.r. 14s., g.r. 13s. 1,015
36, Lorn-rd, u.t. 29 yrs., g.r. 6*l*., y.r. 42*l*... 340

By T. WOODS.

Kentish Town.—6, Hawley-cres., u.t. 23 yrs., g.r. 4*l*. 10s., y.r. 32*l*. 190

By E. FEAR & WALKER (at Winchester).

Winchester.—16, Bridge-st. (s.), f., e.r. 60*l*. .. 995
15, Bridge-st., f., w.r. 20*l*. 16s. 270
1, Cheesehill-st., f., y.r. 34*l*. 445
2 and 3, Cheesehill-st. (Cheesehill Rectory), f., y.r. 18*l*. 4s. 570
53, Hyde Abbey-rd., u.t. 976 yrs., g.r. 2*l*. 5s., e.r. 25*l*. 285

By WINTERTON & SONS (at Tamworth).

Elford, Staffs.—"Upfields Farm," 98 a. 1 r. 26 p., f., y.r. 140*l*. 3,700

May 30.—By BROWETT & TAYLOR.

Newington.—Avonmouth-st., etc., i.g.r. 5*l*. 2s. u.t. 84 yrs., g.r. 4*l*., with reversion 470
Peckham.—Sumner-rd., etc., i.g.r. 16*l*., u.t. 96½ yrs., g.r. 1*l*., with reversion 370

By MARTIN, CLARKE, & Co.

Trusthorpe, Lincs.—"Trusthorpe Manor" and 6½ acres, f. 1,200
Egginton, Beds.—"Langley Cottage," f., y.r. 30*l*. 600

By RUTLEY, SON, & VINE.

Hampstead-road.—9, Edward-st., u.t. 16¾ yrs. g.r. 6*l*., p. 380
Kentish Town.—24 and 26, Clarence-rd., u.t. 32½ yrs., g.r. 6*l*., y.r. 90*l*. 765
14, Leybourne-rd., u.t. 25½ yrs., g.r. 5*l*. 10s. e.r. 36*l*. 210
St. John's Wood.—93, Boundary-rd. (s.), u.t. 45 yrs., g.r. 9*l*. 10s., y.r. 50*l*. 535
Kensal Rise.—45, Ravensworth-rd., u.t. 79½ yrs., g.r. 5*l*. 10s., w.r. 37*l*. 14s. 230
Barnes.—146, Castelnau, u.t. 34 yrs., g.r. 8*l*., y.r. 55*l*. £475
105, Castelnau, u.t. 19½ yrs, g.r. 10*l*., y.r. 70*l*. 400

By F. WARMAN.

Islington.—26, Cleveland-rd., u.t. 47 yrs., g.r. 5*l*., w.r. 93*l*. 12s. 425
Holloway.—15, Poynings-rd., u.t. 65 yrs., g r. 5*l*. 10s., e.r. 36*l*. 295
Finsbury Park.—317, Green-ins., u.t. 51 yrs., g.r. 8*l*. 15s. 6d., p. 1,190
Hornsey Rise.—164, Hanley-rd., u.t. 65½ yrs., g.r. 8*l*., e.r. 50*l*. 390

By DRAWBRIDGE & ANSELL (at Lewes).

Plumpton, Sussex.—"Well House" (poultry farm) and 0 a. 2 r. 26 p., c. 250
Alfriston, Sussex.—The King's Ride, six enclosures of freehold land, 26 a. 1 r. 27 p. (in lots) 336

By VENTOM, BULL, & COOPER (at Newmarket).

Mildenhall, Suffolk.—"The Hall" and 1¼ acres, f., p. 1,100

By ROBERTS, SON, & TORY (on the premises).

Bourton, Dorset.—"Highfield" and 6 a. 0 r. 9 p., also two cottages, f., p. 1,370

By W. H. WINCH & SONS (at Ashford).

Benenden, Kent.—"Bishopsden Farm," 89 a. 3 r. 34 p., f. 2,000
"Hoad's Brook Farm," 20 a. 2 r. 21 p., f. 390
Biddenden, Kent.—"The Paine Land," 8 a. 0 r. 39 p., f. 315
"Summerhill Farm," 49 a. 1 r. 1 p., f. 1,300
"Rat's Castle Farm," 14 a. 0 r. 26 p., f. .. 525
"Upper" and "Lower Brooke's Wood," etc., 187 a. 3 r. 21 p., f. 1,875
"Birch Wood," 32 a. 2 r. 2 p., f. 500
"Toll Gate Cottage" and 0 a. 0 r. 16 p., f. 135
"Lashenden Farm," 110 a. 3 r. 4 p., f. .. 2,300
Frittenden, Kent.—"America" Holding, 21 a. 0 r. 30 p., f. 700
Headcorn, Kent.—The "Wick Hill Land," 53 a. 0 r. 8 p., f. 570

May 31.—By CHARLES CANEY.

Camberwell.—89, Camberwell-gr., f., y.r. 40*l*.. 450

By R. TIDEY & SON.

Kingsland-road.—Nos. 423, 425, 427, and 429, u.t. 20½ yrs., g.r. 24*l*., y.r. 169*l*. 1,100

By THORNBORROW & Co. (at Tebay).

Tebay, Westmorland.—"Daniel Hill" and "Low Scales" Farms, 111 a. 2 r. 28 p., f. 2,460

By HALL, WATERIDGE, & OWEN (at Shrewsbury).

Rushbury, Salop.—The Stanway Manor Estate," 451 a. 0 r. 30 p., f. 12,000

By MADDISON, MILES, & MADDISON (at Yarmouth).

Belton, Suffolk.—A freehold and copyhold farm, 42 a. 1 r. 17 p. 1,525
A copyhold meadow, 0 a. 3 r. 10 p. 105
Four freehold building sites, 3 a. 2 r. 27 p. 160
A freehold house and 1 a. 1 r. 0 p. 235
Ormesby St. Margaret, Norfolk.—A small holding, 4 a. 3 r. 0 p., f. 450
Enclosure of arable, 3 a. 1 r. 11 p., f. 123

June 1.—By BALCH & BALCH.

Camden Town.—109, Camden-rd., with stabling, u.t. 32 yrs., g.r. 6*l*. 10s., p. 700

By ALFRED BOWYER.

Enfield.—Clay-hill, "King's Oak Farm," 48 a. 2 r. 18 p., y.r. 80*l*.; also eight cottages, w.r. 78*l*., f. 3,000
Goat-la., two freehold cottages, w.r. 28*l*. 12s. 300
Hornsey.—56, Hampden-rd., u.t. 76½ yrs., g.r. 7*l*. 10s., y.r. 34*l*. 255

By FAREBROTHER, ELLIS, & Co.

Preston Candover (Hants.).—"North Hall Estate," 403 a. 2 r. 29 p. 6,700
Enclosures of woodland, 77¾ a., f. 280
A small holding, 8 a. 3 r. 6 p., part f., and part u.t. 96½ yrs., g.r. nil 400
A freehold holding, 7 a. 3 r. 19 p. 300
The "Purefoy Arms," p.h., f., y.r. 49*l*. 3,150
Freehold shop and three cottages, y.r. 20*l*. 4s. 350
The school house, residence, and cottage, area, 4 a. 2 r. 27 p., f. 100

By HUNTER & HUNTER.

Kensington.—43, Palace Gdns.-ter., u.t. 48 yrs., g.r. 15*l*., p. 1,120
Holloway.—62 and 64, Queensland-rd., u.t. 28 yrs, g.r. 10*l*., w.r. 72*l*. 16s. 190

By NEWBON, EDWARDS, & SHEPHARD.

Hampstead-road. — 64, George-st., u.t. 14¼ yrs., g.r. 5*l*., y.r. 60*l*. 260
Caledonian-road. — No. 531, u.t. 61¾ yrs., g.r. 9*l*., y.r. 52*l*. 480
Tottenham.—59, Lawrence-rd., f., e.r. 26*l*... 305

By SLADE & BUTLER.

Islington. — 154 and 155, Upper-st. (shop and flats), f., e.r. 395*l*. 5,750

By SLADE & CHURCH.

Ilford. — 10, Christchurch-rd., u.t. 95 yrs., g.r. 7*l*., y.r. 36*l*. 250

By STIMSON & SONS.

Southwark.—76, Union-st. (s.), f., y.r. 45*l*... 660
19, 20, and 21, Lant-pl., f., w.r. 89*l*. 14s. .. 750
Peckham.—137 and 157, Lower Park-rd., f., w.r. 72*l*. 16s. 710
77, Peckham-rd., f., y.r. 42*l*. 670
Camberwell.—20 to 34 (even), Chiswell-st., f., w.r. 219*l*. 14s. 2,100
Mitcham, Surrey.—1 to 6, Runacre's Cottages, f., w.r. 81*l*. 18s. 600
Old Kent-road.—22 and 24, Devonshire-st., u.t. 64½ yrs., g.r. 11*l*. 13s. 4d., w.r. 87*l*. 2s. 500
Peckham.—139, Asylum-rd., f., e.r. 40*l*. 500
East Surrey-gr., f.g.r. 6*l*. 6s., reversion in 25 yrs. 225
Camberwell.—30 and 32, Wells-pl., u.t. 13½ yrs., g.r. 3*l*. 4s., w.r. 49*l*. 8s. 160
Sydenham.—Kent House-la., f.g.r. 19*l*. 10s., reversion in 92 yrs. 420
Fulham.—Aspenlea-rd., f.g.r. 6*l*. 6s., reversion in 90 yrs. 135
Clapham.—135 and 137, Bedford-rd., u.t. 15½ yrs., g.r. 9*l*., y.r. 64*l*. 250
37 and 38, Cottage-gr., u.t. 40½ yrs., g.r. 10*l*., y.r. 54*l*. 380

Kentish Town.—30, Hawley-road, u.t. 31 yrs., g.r. 5s., y.r. 36*l.*	£330
Finsbury Park.—41, Finsbury Park-rd., u.t. 61 yrs., g.r. 9*l.* 9s., y.r. 45*l.*	475
By WILLIAM WILLETT.	
Acton.—6, Avenue-cres., u.t. 71 yrs., g.r. 10*l.*, y.r. 40*l.*	390
81, Avenue-rd., u.t. 71 yrs., g.r. 7*l.*, e.r. 42*l.*	420
June 2.—By GEORGE BILLINGS.	
Poplar.—24 and 25, Desart-st., u.t. 57½ yrs., g.r. 6*l.*, w.r. 54*l.* 12s.	305
Millwall.—5 and 7, Stebondale-st. (s.), u.t. 45½ yrs., g.r. 12*l.*, w.r. 67*l.* 12s.	300
By G. F. HARRINGTON.	
Walworth.—71, Cook's-rd., y.r. 30*l.*, also i.g.r. 5*l.* 5s., u.t. 44½ yrs., g.r. 9*l.* 5s.	280
Kennington.—40, Lorrimore-sq., u.t. 40½ yrs., g.r. 5*l.*, q.r. 40*l.*	370
By H. HOLMES & CO.	
Oxford-street.—38, Berners-st. (s.), u.t. 4¾ yrs. g.r. 6*l.* 5s., y.r. 219*l.*	350
By J. & R. KEMP & CO.	
Regent's Park.—13, Hanover-ter. and 13, Hanover-mews, u.t. 16¼ yrs., g.r. 45*l.*, y.r. 200*l.*	1,200
Pimlico.—51, Hindon-st. (s.), u.t. 19 yrs., g.r. 4*l.*, y.r. 45*l.*	510
By LINNETT & LANE.	
Harlesden.—18 and 20, Inman-rd., u.t. 87½ yrs., g.r. 12*l.*, y.r. 64*l.*	570

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

SATURDAY, JUNE 10.

Royal Institution.—Mr. A. H. Savage Landor on "Exploration in the Philippines," II. 3 p.m.

Edinburgh Architectural Association.—Visit to Inchcolm.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum. Remittances (payable to J MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

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PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 10 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 6 6	" " "
Facing Stocks	2 2 0	" " "
Shippers	2 2 0	" " "
Flettons	1 7 0	" at railway depôt.
Red Wire Cuts	1 14 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	4 2 6	" " "
Do. Bullnose	4 7 6	" " "
Best Stourbridge Fire Bricks	4 0 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	12 0 0	" " "
Headers	11 0 0	" " "
Quoins, Bullnose, and Flats	16 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	7 0	per yard, delivered.
Thames Ballast	5 9	" "
Best Portland Cement	27 0	per ton, "
Best Ground Blue Lias Lime	20 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8¾	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 5	" "
CloseburnRedFreestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides (slabs random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

	s. d.	
Hopton Wood (Hard Bed) in blocks	2 0	per ft. cube, deld. rly. depôt.
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. sawn both sides random slabs	1 0	" "
" " " 2 in. do.	0 8½	" "

SLATES.

in.	in.		£ s. d.	
20 × 10	best blue Bangor		13 2 6	per 1000 of 1200 at r. d.
20 × 12	"	"	13 17 6	" "
20 × 10	first quality	"	13 0 0	" "
20 × 12	"	" "	13 15 0	" "
16 × 8	"	" "	7 5 0	" "
20 × 10	best blue Portmadoc		12 12 6	" "
16 × 8	"	"	6 12 6	" "
20 × 10	best Eureka unfading green		15 17 6	" "
20 × 12	"	"	18 7 6	" "
18 × 10	"	"	13 5 0	" "
16 × 8	"	"	10 5 0	" "
20 × 10	permanent green		11 12 6	" "
18 × 10	"	"	9 12 6	" "
16 × 8	"	"	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42	0 per 1000 at rly. depôt.
Hip and Valley tiles	3	7 per doz. " "
Best Brosely tiles	50	0 per 1000 " "
Do. Ornamental tiles	52	6 " " "
Hip and Valley tiles	4	0 per doz. " "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6 per 1000 " "
Do. Ornamental do	60	0 " " "
Hip tiles	4	0 per doz. " "
Valley tiles	3	0 " " "
Best Red or Mottled Staffordshire do. (Peakes)	51	9 per 1000 " "
Do. Ornamental do	54	6 " " "
Hip tiles	4	1 per doz. " "
Valley tiles	3	8 " " "
Best "Bosemary" brand plain tiles	48	0 per 1000 " "
Best Ornamental tiles	50	0 " " "
Hip tiles	4	0 per doz. " "
Valley tiles	3	8 " " "
Best "Hartshill" brand plain tiles, sand faced.	50	0 per 1000 " "
Do. pressed	47	6 " " "
Do. Ornamental do	50	0 " " "
Hip tiles	4	0 per doz. " "
Valley tiles	3	6 " " "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13 10 0	15 0 0
Deals: best 3 by 9	13 0 0	14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less thn best.
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0

WOOD (*continued*).

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in by 11 in.	18 10 0	20 0 0
" " 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	10 0 0	11 0 0
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Yellow Pine oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 3 0	0 3 6
Small " "	0 2 6	0 2 9
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 9
¾ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 0 0 ...	6 15 0
Compound Girders, ordinary sections	7 10 0 ...	8 10 0
Steel Compound Stancheons	9 2 6 ...	10 12 6
Angles, Tees and Channels, ordinary sections	7 10 0 ...	8 10 0
Flitch Plates	7 15 0 ...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns	6 12 6 ...	7 15 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 0 0 ...	7 10 0
Staffordshire Crown Bars, good merchant quality	7 10 0 ...	8 0 0
Staffordshire "Marked Bars"	9 10 0 ...	—
Mild Steel Bars	8 5 0 ...	8 15 0
Hoop Iron, basis price	8 15 0 ...	9 0 0
" " Galvanized	16 10 0 ...	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 0 0 ...	—
" " 24 g.	10 0 0 ...	—
" " 26 g.	11 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 0 0 ...	—
" " 26 g.	14 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	15 10 0 ...	—
" " 22 g. and 24 g.	16 0 0 ...	—
" " 26 g.	17 10 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
" " 22 g. and 24 g.	13 0 0 ...	—
" " 26 g.	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0 ...	—
" " 26 g.	13 10 0 ...	—
Cut nails, 3 in. to 6 in.	9 0 0 ...	9 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London £ s. d.	£ s. d.
LEAD—Sheet, English, 3 lb. and up	15 10 0 ...	—
Pipe in coils	16 0 0 ...	—
Soil pipe	18 10 0 ...	—
Compo pipe	18 10 0 ...	—

LEAD, &c. (*continued*)—

	Per ton, in London. £ s. d.	£ s. d.
ZINC—Sheet—		
Vieille Montagne .....ton	30 5 0 ...	—
Silesian.....	30 0 0 ...	—
COPPER—		
Strong Sheet.....per lb.	0 0 10 ...	—
Thin „ ..... „	0 0 11 ...	—
Copper nails ..... „	0 0 10 ...	—
BRASS—		
Strong Sheet..... „	0 0 9½ ...	—
Thin „ ..... „	0 0 10 ...	—
TIN—English Ingots ..... „	0 1 4½ ...	—
SOLDER—Plumbers' ..... „	0 0 6½ ...	—
Tinmen's..... „	0 0 8 ...	—
Blowpipe..... „	0 0 9 ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d. per ft. delivered.
„ fourths.....	2d. „ „
21 oz. thirds	3⅜d. „ „
„ fourths.....	3d. „ „
26 oz. thirds	4⅜d. „ „
„ fourths.....	3⅜d. „ „
32 oz. thirds	5⅜d. „ „
„ fourths.....	5d. „ „
Fluted Sheet, 15 oz.....	3¼d. „ „
„ 21 oz.....	4¼d. „ „
½ Hartley's Rolled Plate	2d. „ „
⅓ „ „ „ „	2½d. „ „
½ „ „ „ „	2½d. „ „

OILS, &c.	£ s. d.
Raw Linseed Oil in pipes ..... per gallon	0 1 9
„ „ „ in barrels ..... „	0 1 10
„ „ „ in drums..... „	0 2 0
Boiled „ „ in pipes ..... „	0 1 11
„ „ „ in barrels ..... „	0 2 0
„ „ „ in drums..... „	0 2 2
*Turpentine, in barrels ..... „	0 5 2
„ in drums..... „	0 5 4
Genuine Ground English White Lead per ton	19 15 0
Red Lead, Dry ..... „	19 5 0
Best Linseed Oil Putty ..... per cwt.	0 6 6
Stockholm Tar ..... per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak.....	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage.....	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan.....	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

* In consequence of a contributor's letter being overlooked, the price of turps was not corrected last week as it should have been.

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVII. (July to December, 1904) was given as a supplement with the issue for January 14 last.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-SEVENTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 2s. 0d.
Each additional line ..... 1s. 0d.

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Six lines (about fifty words) or under..... 1s. 6d.
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Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

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PREPAYMENT IS ABSOLUTELY NECESSARY.

. Stamps *must not* be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l*., unless in some exceptional cases and for special reasons.]

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

ALFRETON.—For alterations and additions to the Wycliffe Congregational Church and School, Alfreton. Quantities, etc., by Mr. F. S. Antliff, architect and surveyor, Draycott, Derby:—

J. T. Brown....	£1,700 0	Lee & Kirk, Alfreton*.....	£1,660 0
Harris & Hunt .	1,684 10		
G. Wagg	1,674 19		

BAILDON.—For erecting a villa residence in Westlane. Mr. J. Harper Bakes, architect, Calverley-chambers, Victoria-square, Leeds:—

Masons: Taylor & Ellis, Baildon.....
Joiner: A. Parker, Shipley .....
Plumbers: A. Higginbotham & Sons, Idle
Plasterer: W. Holmes, Baildon..... } £1,332
Roof Tilers: Pickles Bros., Leeds.....

BASFORD (Notts.).—For street works, Chapel-street, etc., Ruddington, for the Rural District Council. Mr. G. W. Hawley, Surveyor, Burton-buildings, Parliament-street, Nottingham:—

D. Roberts .	£1,327 5 3	Thraves & Son.....	£1,072 4 8
Bower Bros.	1,254 5 3	Cox & Co...	1,058 9 2
J. H. Dixon	1,191 10 11	J. Lane	1,006 15 5
H. H. Barry	1,188 19 7	Hawley & Son, Ilkeston* ..	972 13 3
W. R. Swindell.....	1,170 0 4		
Bishop & Son	1,159 6 5		
T. Smart ..	1,115 5 1		

BATLEY.—For new road at Healey, for the Batley Co-operative Society and others. Messrs. C. H. Marriott, Son, & Shaw, engineers, Church-street-chambers, Dewsbury. Quantities by the engineers:—
Messrs. Garforth Bros., Old Bank-road, Mirfield* £770 11 4

BISHOP SUTTON (Somerset).—For the reconstruction of offices and latrines, and the execution of certain alterations and renovations at the Council schools, Bishop Sutton, for the Somerset County Education Committee. Mr. W. F. Bird, architect, Midsomer Norton:—

T. Broad & Sons	£895 0 0	J. Flower, West Harptree* ..	£645 0 0
Wills & Sons ..	746 0 0		
E. Colston	682 17 6		

BOURNE (Lincs.).—For erecting fourteen cottages, for Mr. R. A. Collins. Mr. F. G. Shilcock, architect, Bourne:—

G. Hawley ..	£2,395 0 0	F. Johnson ..	£1,700 0 0
H. Peake	2,000 0 0	Cave, Scotney, & Co.....	1,680 0 0
Wyke & Sons	1,890 0 0	Gelsthorpe & Sons	1,540 0 0
J. H. Clayton	1,876 0 0	Roberts Bros., Peterboro'* .	1,410 9 9
W. T. Walker	1,820 0 0		
Hipwell & Co.	1,755 10 0		
Scotney & Co.	1,715 0 0		

[Bricklayers', plasterers', and carpenters' work only.]

BOURNEMOUTH.—For road and surface drainage on the Malmesbury Estate, for the Town Council. Mr. F. W. Lacey, Borough Engineer and Surveyor, Municipal Offices, Bournemouth:—
Grounds & Newton, Richmond-chambers, Bournemouth*..... £3,992 6 2

BRADFORD.—For erecting a synagogue in Spring Gardens, Manningham-lane, for the Hebrew congregation. Mr. B. S. Jacobs, architect, Lincoln's Inn-buildings, Bowlalley-lane, Hull:—

J. Totty	£3,408 0	E. Good & Son, Ltd.....	£2,526 0
Briggs Bros. ..	2,750 0	J. Stead & Son	2,522 0
T. Obank & Son	2,726 0	T. Taylor & Son	2,510 0
C. Murgatroyd & Son	2,725 0	W. Farnish....	2,500 0
W. H. Holroyd .	2,671 0	W. Hargreaves.	2,485 0
G. Demain & Son	2,628 0	W. Newell	2,471 0
Toothill & Balmforth ..	2,603 10	S. Wray & Co..	2,465 0
E. Fearnby & Son	2,526 0	F. Shackleton..	2,428 0
		J. Moulson & Sons, Bradford*	2,425 0

BRENTFORD.—For about 840 ft. of 3-ft. brick culvert, etc., together with manholes, lampholes, etc., from the Recreation Ground in Albany-road to a point at the Council's wharf in the town meadow, in the Urban District of Brentford, for Brentford Urban District Council. Mr. Nowell Parr, Engineer and Surveyor, Clifden House, Boston-road, Brentford:—

Langley, Hardy, & Johnson ..	£1,668 0 0	W. Neave & Son	£1,419 0 0
G. G. Rayner	1,500 0 0	G Remington	1,373 0 0
S. Kavanagh & Co.	1,489 0 0	C. Ford	1,275 0 0
T. Watson, jun.	1,454 0 0	W. Parker ..	1,050 0 0
C. W. Killingback & Co.	1,420 0 0	G. Wimpey & Co., Hammersmith*.	1,049 0 0
		J. Jackson ..	979 0 0
		Jno. Jackson	928 16 6

BRENTFORD. — For laying a 9-in pipe sewer, together with manholes, lampholes, lift chambers, etc., from Bollo-lane to Thorneyhedge-road, partly in the Urban District of Brentford, and partly in the Urban District of Acton, for the Brentford Urban District Council. Mr. Nowell Parr, Engineer and Surveyor, Clifden House, Boston-road, Brentford:—

W. Neave & Son	£3,198 0 0	Jos. Jackson	£1,813 0 0
W. Parker ..	2,558 0 0	C. Ford	1,796 0 0
T. Watson, jun.	2,369 0 0	S. Kavanagh & Co.	1,795 0 0
G. G. Rayner	2,050 0 0	W. H. Wheeler	1,745 0 0
C. W. Killingback & Co.	1,979 0 0	G. Wimpey & Co., Hammersmith*.	1,649 0 0
Langley, Hardy, & Johnson ..	1,874 0 0	Jno. Jackson.	1,640 15 3

BRENTWOOD.—For the proposed conversion of cottages into stables, Brentwood, for Mrs. Spurgeon. Mr. H. R. Bird, architect and surveyor, Brentwood:—

E. Dix	£315	F. W. Burtwell*	£275

BRIDGWATER.—Free Library, Bridgwater. Mr. E. Godfrey Page, architect, 4 and 5, Warwick-court Gray's Inn, W.C.:—

C. A. Hayes..	£3,993 0 0	Collins & Godfrey ..	£3,437 0 0
J. Perkins & Son	3,695 0 0	E. Love	3,353 0 0
H. A. Forse & Sons.....	3,595 0 0	T. Stockham	3,321 0 0
A. Poole	3,590 0 0	H. J. Spiller & Son	3,250 0 0
R. Wilkins & Sons.....	3,589 0 0	G. W. Pollard & Co.	3,217 12 8
H. Flint	3,567 0 0	J. E. Fursland	3,175 0 0
Gleed Bros...	3,526 0 0	C. Taylor....	3,100 0 0
H. Pittard & Sons.....	3,524 0 0	C. Bryer, jun., Bridgwater*	2,800 0 0
A. E. Donby & Co.	3,459 0 0		

BRIDLINGTON.—For erecting a house, stables, etc., Midway-avenue, for Mr. J. Smith. Mr. A. T. Martindale, architect, Bridlington:

J. H. Hudson..	£499 10 0	A. A. Booth ..	£409 0 0
G. Grainger ..	493 10 0	E. E. Yoemans	403 10 0
M. H. Fell	432 0 0	E. Wilson	399 0 0
Smallwood & Shaw	429 7 0	W. Barnes	387 0 0
H. Hoggard ..	427 5 6	Sampson & Siddall	383 11 6
F. Kneeshaw..	412 12 0	J. R. Stork, Bridlington*.	376 3 6
T. Spink	412 7 0		

CAERAU.—For the erection of additions to Caerau and Spilters Co-operative Stores, at Caerau, near Maesteg, for the trustees and members. Messrs. Evans & Jones, architects and surveyors, 4, Trinity-place, Swansea:—

J. Nicholas.....	£586 10	Rees Protheroe, Cywmer, Port Talbot*	£475 0
J. R. Cornthwaite	520 6		
E. Jones	495 0		

CARDIFF.—For erecting a bandstand at Splott Park, for the Corporation. Mr. W. Harpur, Borough Engineer, Town Hall, Cardiff:—

	£ s.	£ s.	£ s.	£
McCallum & Hope ..	175 0	—	—	—
Rowland Carr & Co...	176 0	178 5	181 10	—
Lion Foundry Co., Ltd.	175 0	—	—	—
Lockerbie & Wilkinson, Ltd.	195 0	—	—	—
W. MacFarlane & Co...	151 0	185 0	195 10	200
M'Dowall, Steven, & Co., Ltd.....	205 0	225 0	—	—
Hill & Smith, Brierley Hill*	173 0	187 0	189 0	—
W. A. Baker & Co., Ltd.	160 0	175 0	195 0	200
J. Boyd & Sons.....	190 0	196 0	200 0	230
D. King & Sons.....	197 0	—	—	—
J. Allan, senr., & Son	175 0	188 10	235 0	—
F. T. Walker.....	195 0	—	—	—
Simpson & Chambers	198 10	—	—	—
Musgrave & Co., Ltd.	190 0	—	—	—
J. & A. Law	200 0	—	—	—

CARLETON.—For children's homes, Carleton, near Pontefract, for the Pontefract Board of Guardians. Messrs. Garside & Pennington, architects, Pontefract and Castleford. Quantities by architects:—

Brick and Stone Work: Walker & Ward, Mill Hill, Pontefract*.....	£1,007 10
Carpenters' and Joiners' Work: G. T. Darnton, Featherstone*	414 0
Plumbers' Work: G. Thompson, Park-lane, Leeds*.....	279 0
Slaters' Work: Stewart Bros., Tanshelf, Pontefract*	102 10
Plasterers' Work: J. Lockwood, Staincliffe, Dewsbury*	87 10
Painters' Work: S. Harrison, Pontefract* ..	27 0

CHISWICK (Middlesex).—For the erection of a laundry, Strand-on-the-Green, for Messrs. Camille Simon, Ltd. Mr. Walter Hearn, architect, Burlington-court, Grove Park West, London, W. Quantities by Mr. C. E. Pease, 16, Clifford's-inn, Fleet-street, E.C.:—

A. J. Thompson & Co.	£7,309	J. Dorey & Co., Ltd.	£6,699
A. & B. Hanson ..	6,955	Courtney & Fairbairn	6,403
G. Andrews & Co.	6,943	Soole & Sons.....	6,400
T. G. Minter	6,891	Mattock & Parsons*	6,337
T. H. Adamson & Sons	6,875		

CORBY.—For the erection of a pair of cottages a Corby, for the Kettering Industrial Co-operative Society Ltd. Messrs. Bird & Batley, architect and surveyors Kettering:

R. R. Colyer	£697 3	Kettering Co-operative Builders	£598
J. Streather & Son	630 0	O. P. Drever	574
C. & F. Henson ..	616 0	C. Andrew	568
Smith & Edmunds	608 0	H. Judkins*.....	566

CUXTON (Kent).—For erecting a new Council school, for the Kent Education Committee. Mr. G. E. Bond architect, 384, High-street, Rochester:—
G. Gates, Frindsbury, Rochester* £2,500

ELGIN.—For erecting a villa in Seafield-street. Mr R. B. Pratt, architect, Town and County Bank Buildings Elgin:—

Mason: J. McPherson, Elgin.....
Carpenters: J. & A. Robb, Rothes ..
Plumbers: Lyon & Son, Elgin .....
Slaters: A. Davidson & Son, Elgin ..
Plasterer: G. Gray, Elgin .....
Painter: W. Fordyce, Elgin ..... } £578

ENFIELD.—For making-up Soham-road, Enfield Lock, for the Urban District Council. Mr. R. Collins Surveyor, Council Offices, Enfield:—

T. Almond & Sons, Ltd.	£540	E. J. Betts, Enfield Highway*.....	£375
J. Jackson	450		

EPSOM.—For two extensions of the sewers at West Ewell, for the Rural District Council. Mr. W. T. Wooldridge, surveyor, Waterloo-road, Epsom :—

A. E. Rigby	£353	W. H. Wheeler	£267
J. May	315	S. Kavanagh & Co., Surbiton Hill*	266
J. B. Potter	315		
A. C. Soan	275		

FARRINGTON GURNEY (Somerset).—For the erection of a block of four cottages (Tender A) and the execution of certain works in connexion with six other cottages (Tender B) at Farrington Gurney, for Mr. Harry Thom Blinman. Mr. W. F. Bird, architect, Midsomer Norton :—

	Tender A.	Tender B.
W. A. Catley	£795 0	£570 0
Galt & Son	720 0	570 0
J. Sperring	698 0	561 0
J. Flower	670 0	560 0
F. James & Sons	650 0	540 0
W. J. Heal, High Littleton*	598 8	427 5

GRAMPOUND (Cornwall).—For alterations and addition to National School, for the Trustees of the School. Mr. F. C. Jury, architect, 1, Alma-villas, Tregonissay-road, St. Austell :—

Carpentry: A. R. Bennett	£200 0
Carpentry: J. Northcott	212 0
Masonry: F. Bennett	205 0
Carpentry: T. J. Richards, St. Stephen's, Coombe, Grampound-road*	150 0
Carpentry: R. Tregemna & Son	150 0
Masonry: R. Richards, Mount Chaveles, St. Austell*	138 10

HARROGATE.—For pipe lines, section No. 2, Masham scheme, for the Corporation :—

E. Fotherby & Co.	£7,568 0 0
Davies, Ball, & Co.	5,670 0 0
T. C. Starkey	5,333 15 6
Greaves & Wheater	5,295 15 10
Hardy & Atkinson	5,161 16 9
J. Downham	5,100 8 2
Blair & White	4,953 1 10
Holme & King, Ltd.	4,705 0 10
W. Denley	4,649 8 6
A. E. Nunn	4,525 5 4
R. Annakin	3,993 14 11
Kaye Bros.	3,896 3 11
Westminster Construction Co.	3,871 9 4
C. Bushby & Son	3,849 0 0
R. Barker	2,844 1 3
H. Arnold & Son	3,840 0 0
J. Brunton	3,828 9 5
J. Mackay	3,788 3 6
J. Sangwin	3,689 8 4
H. Buckley	3,681 0 6
F. U. Simpson	3,604 9 6
Hall	3,512 10 0
Jowett Bros.	3,454 19 8
R. C. Brebner & Co.	3,379 12 6
W. Watson	3,329 7 6
T. Egan & Son	3,292 5 5
T. Young & Son, Wakefield*	3,249 19 8
G. Parsons	3,220 11 4
W. Carr	3,199 5 7
J. H. Wood	2,993 0 0

HENDON.—For making up Ramsey and Argyle roads, West Hendon, N.W., for the Urban District Council. Mr. S. Slater Grimley, A.M.I.C.E., Surveyor to Council :—

—	Ramsey-rd. £ s. d.	Argyle-rd £ s. d.	— £ s. d.
British Paving & Granite Co.	1,292 18 2	824 12 9	2,117 10 11
T. Adams	1,042 6 6	677 18 6	1,720 4 6
A. B. Champniss	1,047 11 0	656 4 0	1,703 15 0
R. Ballard, Ltd.	1,033 9 3	660 19 6	1,694 8 9
F. Fowles	1,010 9 9	654 16 9	1,665 6 6
A. P. Catty, 23, Lloyd's-square, W.C. ‡	978 5 2	627 14 2	1,605 19 4

‡Recommended by Committee for acceptance.

IDEFORD.—For the construction of a reservoir to contain 10,000 gallons, and for providing and laying about 1,210 yds. of 3-in. cast-iron water mains, with the necessary valves, hydrants, etc., for the Newton Abbott Rural District Council. Mr. S. Segar, Engineer, Union-street, Newton Abbot :—

A. N. Coles	£650 0 0	W. Watson	£526 19 9
G. E. Hughes	632 9 6	G. Hicks	520 0 0
T. Shaddock	597 5 6	J. Ford	508 6 7
J. Shaddock	594 6 9	Exors. of J. Arundel	502 0 0
R. Tabor	591 4 10	W. T. Stevenson	500 0 0
A. Ball & Co.	576 1 9	E. Pike, Torquay*	496 18 0
T. Doney	576 0 2	E. Smith & Co.	490 9 3
R. E. Narracott	572 12 6	Steer & Pearse‡	466 8 0
F. A. A. Stacey	560 0 0	W. Barwick	458 15 1½
Hawking & Best	537 0 0		
Meredith Bros.	535 3 0		
E. Duke	527 12 0		

‡ Withdrawn.

ISHAM.—For the erection of a country house, Isham, for Mr. G. Randall. Messrs. Bird & Batley, architects and surveyors, Kettering :—

E. Brown & Son	£797 10	Smith, Edmunds, & Co.	£762 0
Berrill & Green	789 0	C. & F. Henson	756 0
Capps, Rowley, & Keach	768 0	A. J. Ball	754 0
A. Lewis	765 0	C. Lewis	750 0
A. Lewis & Son	763 0	Kettering Co-operative Builders	744 0

LONDON EDUCATION COMMITTEE TENDERS.

Kennington, South Lambeth-road (Improvements to School.)

Providing a hall about 51 ft. by 28 ft. for each department; new classroom for each department (boys, 48; girls, 48; infants, 56); two new staircases and entrances for boys' and girls' departments, and two new entrances for infants' department; lavatory for boys' department; cloakrooms, teachers' and head teachers' rooms, and stockrooms for each department; redividing, restepping, etc., certain classrooms in all departments; rebuilding (boys' and girls' offices, and division wall between the playgrounds; and forming a new heating chamber and coal cellars in basement. Heating by low-pressure hot-water apparatus. The revised accommodation, on the completion of the improvements, will be—Boys, 372; girls, 356; infants, 390; total, 1,118; being a net loss of 54 places :—

J. Grover & Son	£15,984	Lawrance & Sons.	£14,404
W. Downs	15,944	Treasure & Son	14,383
F. & H. Higgs	15,882	J. & M. Patrick	14,270
Patman & Fotheringham, Ltd.	15,723	W. Johnson & Co., Ltd.	14,151
Lathey Bros.	15,483	J. Appleby & Sons	14,089
Killby & Gayford	15,359	W. Smith & Son	14,088
Clarke & Bracey	15,118	J. Marsland & Sons	13,855
J. Greenwood, Ltd.	14,959	J. Garrett & Son	13,773
W. King & Son	14,773	E. Triggs, 92, The Chase, Clapham‡	13,386
J. & C. Bowyer	14,587		
H. L. Holloway	14,546		

‡ Recommended for acceptance.

[The estimate of the architect (Education) for the work amounts to £14,284.]

Clapham, Broomwood-road (Iron Buildings).

Mitson & Harrison	£1,800 0	Humphreys, Ltd.	£1,620 0
T. J. Hawkins & Co.	1,789 10	A. Leather	1,570 0
T. Cruwys	1,784 0	W. Harbrow	1,559 0
R. Iles, Ltd.	1,775 0	J. McManus, 237, Hammersmith-road*	1,405 0

St. Pancras, S., Manchester-street (Laundry and Housewifery Centres).

Staines & Son	£2,789 0	J. Grover & Son	£2,638 0
T. L. Green	2,787 0	L. H. & R. Roberts	2,625 0
J. Peattie	2,754 11	J. Willmott & Sons	2,600 0
W. Shurmur & Sons, Ltd.	2,745 0	E. Lawrance & Sons	2,503 0
G. S. S. Williams & Son	2,727 0	G. Neal, Tennyson Works, Willesden-lane*	2,465 0
General Builders, Ltd.	2,678 0		
J. Appleby & Sons	2,658 0		
Stevens Bros.	2,656 0		
Marchant & Hirst	2,638 0		

Poplar, E., Brunswick-road Day Industrial School (Cleaning and Painting).

J. Dolman & Co.	£338 0	Vigor & Co.	£241 10
Parrott & Isom	330 0	A. E. Symes, Carpenter's-road, Stratford*	225 0
A. W. Derby	315 0		
H. Bouneau	312 0		
A. J. Sheffield	284 0		

Chelsea, Park-walk (Laundry Centre).

For the adaptation of the deaf centre in connexion with the Park-walk school, Chelsea, for use as a laundry centre :—

E. Triggs* £194

Repairs to Schools on Schedule of Prices.

The Tenders of the undermentioned contractors for executing repairs to schools, so far as the buildings only are concerned, in the county electoral areas specified below, and to the Gordon House and the Mayford Industrial schools (outside the county), at the printed schedule of prices, 1902, as revised by the addendum, dated April, 1905, or with a percentage to be added to, or deducted from, the printed prices in certain cases, as stated below, were accepted; each contract to remain in force for a period of one year, and thereafter until determined by three months' previous written notice by either party, to expire at any time :—

—	—	(*a*) Repairs, measured work.	(*b*) Sanitary, measured work.	(*c*) Day work generally.
Battersea	T. Lapthorne & Co., 1, High-street, Lambeth	At schedule prices	At schedule prices	At schedule prices
Bermondsey	W. H. Lascelles & Co., 121, Bunhill-row	do.	do.	do.
Bethnal Green, N.E.	do.	do.	do.	do.
Bethnal Green, S.W.	do.	do.	do.	do.
Bow and Bromley	Langdon & Clark, 3, Grosvenor-road, Ilford	7½	10	7½
Brixton	W. J. Coleman & Co., 1, Wynne-road, Brixton	At schedule prices	At schedule prices	At schedule prices
Camberwell, N.	W. Johnson & Co., Ltd., Bellevue-road, Wandsworth Common	5	10	5
Chelsea	C. Wall, Ltd., Upcerne-road, Chelsea	— 5	— 5	At schedule prices
City of London	W. H. Lascelles & Co., 121, Bunhill-row	— 2½	— 2½	— 2½
Clapham (group 1)	E. Triggs, 92, The Chase, Clapham	5	5	5
Clapham (group 2)	J. Garrett & Son, 17, Balham-hill	5	5	5
Deptford	F. J. Gorham, Point-hill, Greenwich	— 3	— 3	— 3
Dulwich	W. Johnson & Co., Ltd., Bellevue-road, Wandsworth Common	5	10	5
Finsbury, C.	W. H. Lascelles & Co., 121, Bunhill-row	— 2½	— 2½	2½
Finsbury, E.	do.	— 2½	— 2½	2½
Fulham (group 1)	do.	5	5	5
Fulham (group 2)	C. Leather & Sons, 114, Merton-road, Wandsworth	5	5	At schedule prices
Greenwich	F. J. Gorham, Point-hill, Greenwich	— 3	— 3	— 3
Hackney, C.	W. H. Lascelles & Co., 121, Bunhill-row	2½	2½	2½
Hackney, N.	do.	2½	2½	2½
Hackney, S. (group 1)	do.	2½	2½	2½
Hackney, S. (group 2)	do.	2½	2½	2½
Haggerston	do.	5	5	5
Hammersmith	do.	7½	7½	7½
Hampstead	G. Neal, Tennyson Works, Willesden-lane	10	12½	10
Holborn	W. H. Lascelles & Co., 121, Bunhill-row	2½	2½	2½
Hoxton	do.	2½	2½	2½
Islington, E.	do.	2½	2½	2½
Islington, N.	do.	2½	2½	2½
Islington, S.	do.	2½	2½	2½
Islington, W.	do.	2½	2½	2½
Kennington	T. Lapthorne & Co., 1, High-street, Lambeth	At schedule prices	At schedule prices	At schedule prices
Kensington, N.	G. Neal, Tennyson Works, Willesden-lane	10	12½	10
Kensington, S.	W. Johnson & Co., Ltd., Bellevue-road, Wandsworth-common	10	12½	10
Lambeth, N.	T. Lapthorne & Co., 1, High-street, Lambeth	At schedule prices	At schedule prices	At schedule prices
Lewisham (group 1)	Kirk & Randall, Warren-lane Works, Woolwich	5	10	7½
Lewisham (group 2)	do.	5	10	7½
Limehouse	Langdon & Clark, 3, Grosvenor-road, Ilford	7½	10	7½
Mile End	do.	7½	10	7½
Marylebone, E.	W. H. Lascelles & Co., 121, Bunhill-row	5	5	5
Marylebone, W.	G. Neal, Tennyson Works, Willesden-lane	10	12½	10
Newington, W.	W. H. King, 39A, Inville-road, Walworth	— 5	— 5	At schedule prices
Norwood (group 1)	W. Johnson & Co., Ltd., Bellevue-road, Wandsworth Common	5	10	5
Norwood (group 2)	do.	5	10	5
Paddington, N.	G. Neal, Tennyson Works, Willesden-lane	10	12½	10
Peckham	W. H. Lascelles & Co., 121, Bunhill-row	5	5	5
Poplar	do.	5	5	5
Rotherhithe	do.	5	5	5
Strand	do.	2½	2½	2½
St. Geo.-in-the-East	do.	2½	2½	2½
Stepney	do.	2½	2½	2½
St. Pancras, E.	do.	2½	2½	2½
St. Pancras, N.	C. Wall, Ltd., Upcerne-road, Chelsea	— 5	— 5	At schedule prices
St. Pancras, S.	W. H. Lascelles & Co., 121, Bunhill-row	2½	2½	2½
St. Pancras, W.	do.	2½	2½	2½
Southwark, W.	T. Lapthorne & Co., 1, High-street, Lambeth	At schedule prices	At schedule prices	At schedule prices
Walworth	W. H. King, 39A, Inville-road, Walworth	— 10	— 10	— 5
Wandsworth (group 1)	C. Leather & Sons, 114, Merton-road, Wandsworth	At schedule prices	2½	At schedule prices
Wandsworth (group 2)	do.	do.	5	do.
Westminster	W. H. Lascelles & Co., 121, Bunhill-row	2½	2½	2½
Whitechapel	do.	2½	2½	2½
Woolwich (group 1)	Kirk & Randall, Warren-lane Works, Woolwich	5	10	7½
Woolwich (group 2)	do.	5	10	7½
	OUTSIDE THE COUNTY.			
Gordon House Industrial School, Isleworth	H. Tinkler, 72, Northcote-road, St. Margaret's, Twickenham	At schedule prices	At schedule prices	At schedule prices
Mayford Industrial School	C. C. Colborne, Star Hill, Woking	— 4	— 2½	— 5

TENDERS.—*Continued on page 643.*

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, etc., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*New School, Bexhill-on-Sea	Education Committee	50*l.*, 30*l.*, and 20*l.*	July 27

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Scavenging	Rhondda U.D.C.	W. J. Jones, Surveyor, Council Offices, Pentre	June 9
Co-operative Convalescent Home, Blackpool	.....	J. B. Thornley, Architect, 14, Birley-street, Blackpool	June 10
Covered Market, Oxford-street	Belfast Market Committee	City Surveyor's Office, Belfast	do.
200 tons of Irish Lime	Port Glasgow Town Council	A. Paton, Town Clerk, Port Glasgow	June 12
Altera. and Painting, Welsh Baptist Chapel, Hengoed	.....	Rev. R. Evans, Hengoed	do.
Extens. to Dormitories, etc., Dunfermline Poorhouse	.....	A. Muirhead, Architect, 4, Abbey-park-place, Dunfermline	do.
Byres, Bangour Village Asylum	Edinburgh District Lunacy Board	H. J. Blanc, R.S.A., 25, Rutland-square, Edinburgh	June 13
Alterations to Farmsteading Asylum	do.	do.	do.
Alterations, etc., Tabernacle Welsh Chapel, Ynysybwl	.....	D. D. Jones, Co-operative Stores, Ynysybwl	do.
4,500 tons of Granite	Reigate Corporation	Borough Surveyor, Municipal Offices, Reigate	do.
Tar Paving, Redhill	do.	do.	do.
Tar Paving, Reigate	do.	do.	do.
1,209 yds. super. of Retopping, Reigate and Redhill	do.	do.	do.
Private Street Improvement Works	Whitby and Monkseaton U.D.C.	J. Moore, Surveyor, Council-buildings, Whitby Bay, R.S.O.	do.
Decoration of Exterior of Town Hall	Sheffield Decorations Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield	do.
Stores	Kingston-on-Thames Corporation	H. A. Winser, Town Clerk, Municipal Offices, Kingston	June 14
Road Materials and Concrete Flags	Horsforth U.D.C.	R. R. Jones, Engineer and Surveyor, Council Offices, Horsforth	do.
Fireplace in Com.-rooms at Mun. Technical School	Halifax Education Committee	J. Lord, Borough Engineer, Town Hall, Halifax	do.
Rolled Material for Construction of Wagons, etc.	East India Railway Co.	C. W. Young, Secretary, Nicholas-lane, London, E.C.	do.
Galvanised Corrugated Sheets	do.	do.	do.
Cables, Meters, etc., Electricity Department	Manchester Corporation	F. E. Hughes, Electricity Department, Town Hall, Manchester	do.
Sewage Disposal Works, Wickwar	Chipping Sodbury R.D.C.	Council Offices, Chipping Sodbury	do.
Dwarf Wall and Railings (80 yds.), North-road	Cardiff Corporation	W. Harpur, Borough Engineer, Town Hall, Cardiff	do.
Larkhill Sewerage	Farnworth U.D.C.	W. J. Lomax, Engineer, 11, Fold-street, Bolton	do.
Twenty Cottages at Fir Phil	Fir Phil Building Club	P. Vivian Jones, Architect and Surveyor, Hengoed	do.
Re-roofing Scaleby Church, near Carlisle	.....	J. H. Martindale, Architect, Viaduct-chambers, Carlisle	do.
Additional Story to Imbecile Ward, Workhouse	Edmonton Guardians	T. E. Knightley, Architect, 106, Cannon-street, E.C.	do.
Six Through Houses at Ford Hill, Queensbury	.....	J. Drake & Son, Architects, Queensbury	June 15
Extension of St. Barnabas Church, Stoke-on-Trent	.....	Lynam, Beckett, & Lynam, Architects, Stoke-on-Trent	do.
13 Houses & 3 Shops, Helmsley-rd., Newcastle-on-T.	.....	10, Trafalgar-street, Newcastle-on-Tyne	do.
Erection of Cemetery, Chapel, etc., Oughtibridge	Bradfield Parish Council	Ellis Bros., Architects, 37, Orchard-street, Sheffield	do.
Underground Steel Liquor Tank, Ystrad Gasworks	Rhondda U.D.C.	O. Thomas, Engineer, Gas Offices, Pentre, Glam.	do.
*Repairs, Clean., etc., Out-Relief Statn., Clarendon-sq.	St. Pancras Guardians	Clerk to the Guardians, Town Hall, Pancras-road, N.W.	do.
Supplies	Chelmsford Corporation	Borough Surveyor, 16, London-road, Chelmsford	do.
Stores	Bristol Guardians	J. J. Simpson, Clerk, St. Peter's Hospital, Bristol	June 16
Concrete Paving for Playgrounds	Shettleston School Board	J. Watson, 24, Saint Vincent-place, Glasgow	do
Enclosing Land at Burial Ground	Trustees of Loxley Chapel	G. A. Wilde, Architect, 9, Bank-street, Sheffield	do.
Infirmary at Wetherby Workhouse	Wetherby Guardians	Runton & Barry, Architects, Hull	do.
Altera., etc., Congrega. Chapel, St. Bride's-super-Ely	.....	Mr. John, Tyfri, St. George's, near Cardiff	do.
Villa, Blackwood, Mon.	Mr. Scudamore	W. Dowdeswell, Architect, Treharris	do.
Alterations to "George Inn," Brithdir	.....	G. Kenshole, Architect, Station-road, Bargoed	do.
Dwelling House at Carton, Edgeworthstown	.....	Mrs. Langan, Carton, Edgeworthstown, Ireland	do.
*Fitting up New Cupboards, etc. at Raine-st., Infirmary	St. George-in-the-East Guardians	Clerk to Guardians, Guardians' Offices, Raine-st., Old Gravel-la., E.	do.
Outside Paint., County Asy., Whittingham, Preston	.....	At the Asylum	June 17
Paints, Oils, etc., County Asy., Whittingham, Preston	.....	do.	do.
Sea Wall, Slipway, etc., St. Mawes	.....	Coastguard Boathouse, St. Mawes, Cornwall	do.
Composite Road and Iron School, Mangotsfield	Gloucester C.C. Education Com.	R. S. Phillips, Surveyor, Shire Hall, Gloucester	do.
Alterations, etc., Barton National School and House	.....	School House, Barton, near Darlington	do.
Painting Building at Borough Isol. Hos., Mount Gold	Plymouth Corporation	F. M. Williams, Health Department, 19, Whimple-st., Plymouth	do.
Entrance Lodge, etc., Workhse., Gibbet-st., Halifax	.....	W. Clement Williams, Architect, 29, Southgate, Halifax	June 19
Laboratory Fittings, Grange Road School	Bradford Education Committee	T. C. Hope & Son, Architects, 23, Bank-street, Bradford	do.
Widening Road	Ebbw Vale U.D.C.	T. J. Thomas, Engineer and Surveyor, Ebbw Vale	do.
3 Iron Fire Escape Staircases, etc., Workhse., W. End.	South Stoneham Guardians	W. H. Mitchell, Son, & Gutteridge, 9, Portland-street, Southampton	do.
Materials, Cheshire County Lunatic Asylum, Upton	.....	A. Hornby, Clerk to Asylum Committee, Upton, Chester	do.
Extension of Railway Siding (Gasworks Siding)	Bury Gas Committee	H. Simmonds, Engineer, Gasworks, Bury	do.
Additions to Technical Schools, Batley	The Governors	W. Hanstock & Son, Architects, Branch-road, Batley	do.
Private Street Works	York Corporation	A. Creer, City Engineer, Guildhall, York	do.
Stores	Directors, G.W. Rly. Co.	G. K. Mills, Paddington Station, London	do.
Colouring and Painting Elementary Schools	Halifax Education Committee	J. Lord, Borough Engineer, Town Hall, Halifax	do.
Painting Technical Schools, Hopwood-lane	do.	do.	do.
Schools at Salter Lebble	do.	do.	do.
Cast-Iron Pipes and Castings	Keighley Gas Committee	J. Laycock, Gas Engineer, Cook-lane, Keighley	do.
Stores	Howell Duffryn Steam Coal Co.	Stores Manager, Aberaman Offices, near Aberdare	do.
*Supply of Uniform Clothing, Caps, etc.	West Ham Borough Council	Borough Engineer, Town Hall, West Ham, E.	do
Stores	.....	Graigola-Merthyr Co., Ltd., Swansea	June 20
Alterations at Union Workhouse, Selly Oak	King's Norton Guardians	C. Whitwell & Son, Architects, 23, Temple-row, Birmingham	do.
4 Through Houses, etc., Wood Bottom, Hipperholme	.....	Longbottom & Culpan, Architects & Surveyors, George-st., Halifax	do.
Making-up Streets	Acton District Council	D. J. Ebbetts, Surveyor, 57, High-street, Acton, W.	do.
Cleaning and Painting 17 Council Schools	Birmingham Education Committee	Architect's Office, Education Dept., Edmund-street, Birmingham	do.
Cleaning and Painting 2 Voluntary Schools	do.	do.	do.
Private Street Works, Hornchurch	Romford R.D.C.	E. G. Boden, Surveyor, Victoria-chambers, Victoria-rd., Romford	do.
Painting, etc., at 4 Elementary Schools	Carlisle Education Committee	H. C. Marks, Surveyor, 36, Fisher-street, Carlisle	do.
Sewage Works Grampound-road	Truro R.D.C.	R. H. Worth, C.E., George-street, Plymouth	do.
Alterations to Grayingham Church, Lincs.	.....	C. Hodgson Fowler, F.S.A., Architect, The College, Durham	do.
*Alterations and Additions to Schools, Woking	Surrey Education Committee	Jarvis & Richards, Architects, 36, Victoria-street, S.W.	do.
*Re-wiring Electric Bells at Infirmary	Paddington Guardians	E. H. Sim, Architect, 8, Craig's-court, Charing Cross, W.C.	do.
Heightening Road near Broadwood Hall	Lanchester R.D.C.	W. Cumming, Surveyor's Office, Lanchester	June 21
4 Concrete Filter Beds, Tewkesbury	Cheltenham Corporation	J. S. Pickering, Boro' Engineer, Municipal Offices, Cheltenham	do.
Fire Engine House at Cheltenham	do.	do.	do.
Mission Hall with Vestries, The Heath, Cardiff	Rev. J. Pugh, D.D.	Veall & Sant, Architects, Cardiff	do.
Reconstruction, etc., of Settling Tanks at Sew'ge Fm.	Hoyland Nether U.D.C.	H. G. Keywood, Engineer, Hoyland Nether, near Barnsley	do.
5 Classrooms, South Tiverton Schools, Bath	Somerset Education Committee	W. F. Bird, Architect, Midsomer Norton	do.
Laundry & Washh'se, Day Indus. Sch., Temple Backs	Bristol Education Committee	P. Addie, Council House, Bristol	June 22
Pair of Bungalows, Leeds & Whitehall-rd., Lightcliffe	.....	R. Berry, Architect, Commercial-street, Halifax	do.
Granite Chips	North Walsham U.D.C.	E. J. Simpson, Surveyor, North Walsham	do.
*Sewerage and Sewage Disposal Works	Malling R.D.C.	Council's Engineer, High-street, Sittingbourne	do.
Main Sewerage and Sewage Disposal of Askern	Doncaster R.D.C.	D. Balfour & Son, Engineers, 3, St. Nicholas-b'ld'gs, New.-on-T.	June 23
*Erection of Ornamental Masonry Structure	Lancaster Corporation	J. Belcher, Architect, 20, Hanover-square, W.	do.
Electrical Equipment of Tramways	Aston Manor Corporation	R. Green, Engineer, 37, Waterloo-street, Birmingham	do.
Colour Washing and Painting Elementary Schools	Manchester Corporation	Education Offices, Deansgate	June 24
Altera., etc., to Zion English Baptist Ch., Ynysybwl	Trustees	Morgan & Elford, Architects, 1, Jeffrey-street, Mountain Ash	do.
*Alterations, St. John's Girls' School	Bermondsey Borough Council	Borough Surveyor, Town Hall, Spa-road, S.E.	do.
Pumping Stations, Sewers, etc., Shenfield	Billericay R.D.C.	Messrs. Jones, Engrs., Parliament Mansions, Victoria-street, S.W.	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
*Making-up Roads	Beckenham U.D.C.	Council's Surveyor, Beckenham	June 25
*Painting, etc., Works at Infirmary	Paddington Guardians	E. H. Sim, Architect, 8, Craig's-court, Charing Cross, W.C.	do.
Masonic Hall, Barry	.....	J. A. Owen, Architect, Main-street, Cadoxton, Barry	June 26
Extension of Sewage Disposal Works	Leek U.D.C.	W. E. Beacham, Engineer, Town Hall, Leek	do.
Road Works, Butterfield-street	Lewisham Borough Council	Surveyor's Department, Town Hall, Catford	do.
Dust Destructor	Ilford U.D.C.	H. Shaw, Engineer, Town Hall, Ilford	do.
*New Petty Sessional Ct. & Technical Sch., Cheshunt	Herts C.C.	County Surveyor, Hatfield	do.
*Painting, Colouring, etc., Schools, Southall	St. Marylebone Guardians	Superintendent at Schools	do.
Heating Workhouse and Infirmary, Tendring	Guardians	Price & Belsham, 52, Queen Victoria-street, London, E.C.	June 27
Three Weighbridges at Depots	Southampton Corporation	J. A. Crowther, Borough Engineer, Southampton	do.
Isolation Hospital	Caerphilly U.D.C.	J. H. Phillips, Architect, Clive-chambers, Windsor-place, Cardiff	do.
*Patent Office Extension, Furnival-street, E.C.	Commissioners of H.M. Works, etc.	H.M. Office of Works, Storey's-gate, S.W.	do.
*Tar-paving Playgrounds of School	Leyton Education Committee	W. Jacques, Architect, 2, Fen-court, E.C.	do.
*Painting, Repairs, etc., to Schools	do.	do.	do.
*Erection of Schools	Hove Education Committee	Clayton & Black, 10, Prince Albert-street, Brighton	June 28
*Repairing, Painting, etc., Tate Central Library	Lambeth Borough Council	Borough Engineer, 346, Kennington-road, S.E.	June 29
Water Supply to Workhouse	Rothbury Guardians	A. Snarth, Bolam House, Rothbury	June 30
Painting, etc., Provided Schools, Ecclesfield District	West Riding C.C. Education Dept.	W. Hayne, Divisional Offices, Ecclesfield, Sheffield	July 3
Painting and Lettering Rly. Coal Wagons at Colliery	.....	Lincoln Wagon and Engine Co., Ltd., Lincoln	No date.
Driving a Drift, 200 yds., Dick Ing & Latham Farms	.....	W. B. Woodhead & Son, Surveyors, Exchange, Bradford	do.
1,500 yds. of Asphalting, Selby Isolation Hospital.	.....	T. S. Ullathorne, Contractor, Selby	do.
Painting Hilton & Hilton's Piano Factory, Leeds	.....	84, Briggate, Leeds	do.
Alterations, etc., High Kesket Church School	The Committee	Oliver & Dogshun, Architects, Carlisle	do.
Cleaning off Paint and Fitting Old Oak Panelling	.....	M. Ogilvy Spence, Glynneath, Glam.	do.
Painting Outside of Wycliffe Hall, near Winston	.....	T. B. Jackson, Riston Grange, Hull	do.
Stores	Stockport Corporation	Tramways Managers, 1, Brown-street, Heaton-lane, Stockport	do.
Residence at Llanwrtyd Wells	Mr. J. T. Evans	Swash & Bain, Architects, Midland Bank-chambers, Newport	do.
*Branch Library, Upper Holloway	Islington Public Libraries Committee	Town Clerk, Town Hall, Upper-street, N.	do.
*Additions to Nurses' Home and Painting Work	Kingston Union	W. H. Hope, Architect, Seymour-road, Hampton Wick	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Clerk of Works	Twickenham U.D.C. Educa. Com.	3*l.* 3s. per week	June 15
*Chief Assistant (Arch. and Building Trades' Dept.)	Northern Polytechnic Institute	125*l.* per annum	June 19
*Chief Assistant (Mechanical Engineering Department)	do.	150*l.* per annum	do.
*Assistant Civil Engineer	Admiralty	Not stated	June 28
*Teacher of Carpentry and Joinery	Middlesex Education Committee	12s. 6d. per evening	June 29
*Teacher of Builders' Quantities	do.	15s. per evening	do.

Those marked with an (*) are advertised in this number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvi.

TENDERS.—*Continued from page 641.*

KENSWORTH.—For erecting an infectious diseases hospital for twenty beds, for the Dunstable and District Hospital Joint Committee. Mr. G. Simcox, C.E., architect, Town Hall, Dunstable. Quantities by Messrs. Anscombe & Franklin, Luton:—

Saunders & Son	£4,865	A. Robinson	£4,176
T. Yirrell	4,775	H. Higgs	4,100
H. Salisbury & Sons	4,680	C. Wright	3,888
W. G. Dunham	4,640	S. W. Nash, Dunstable*	3,685
Pitkin & Son	4,293		
H. Goodman	4,180		

KEYNSHAM.—For additions to infirmary at Keynsham Union Workhouse, for the Guardians. Mr. H. M. Bennett, architect and surveyor, Liverpool-chambers, 36, Corn-street, Bristol:—

Adams & Jefferies, Oldland Common, Bristol* .. £1,298

[Twelve tenders sent in. Highest, £2,266; lowest, £1,200.]

LONDON.—For painting, etc., at the Workhouse, Ladywell, S.E., for the Bermondsey Board of Guardians. Messrs. Newman & Newman, architects, 31, Tooley-street, London Bridge, S.E.:—

Richards, 9, Shannon-grove, Brixton, S.W. ... £724

LONDON.—For alteration to saloon bar of "The Bow Bells," Bow, E. Mr. H. Riches, architect, 3, Crooked-lane, King William-street, London, E.C.:—

T. Osborn & Son ... £217 | J. T. Robert‡ £200

‡ Accepted with small modifications.

LONDON.—For repairs and decorations to "The Hulse Arms," Ilford, London, E. Mr. H. Riches, architect, 3, Crooked-lane, King William-street, London, E.C.:—

A. W. Derby	£178 0	F. & A. Willmott	£146 0
Sheffield Bros.	160 0	Clemens Bros.*	145 10

LONDON.—For work at the Sebright Music Hall, Bethnal Green, N.E. Mr. H. Riches, architect, 3, Crooked-lane, King William-street, London, E.C.:—

Builders: Kirk & Kirk	£290	0 0
Fire Mains, etc.: Merryweather & Sons, Ltd.	59	18 0

LONDON.—For main pump renewals, Western pumping station, for the London County Council:—

Fullerton, Rodgart, & Barclay, Ltd.	£5,260	0
Galloways, Ltd.	4,217	0
Clayton, Goodfellow, & Co., Ltd.	3,995	0
Richardsons, Westgarth, & Co., Ltd.	3,597	10
J. Musgrave & Sons, Ltd.	3,503	0
J. Simpson & Co., Ltd.	3,500	0
Glenfield & Kennedy, Ltd.	3,448	0
J. Cochrane	3,350	0
The Thames Ironworks Shipbuilding and Engineering Co., Ltd.	3,320	0
Fleming & Ferguson, Ltd.	3,320	0
Hathorn, Davey, & Co., Ltd., Leeds*	2,534	0

LONDON.—For the construction and re-construction of further tramways (roadwork, paving works, etc.), for the London County Council:—

—	Tramways work (exclusive of Woolwich-road lines).	Paving works for street widenings.	—
	£ s. d.	£ s. d.	£ s. d.
G. Hay & Co.‡	112,598 10 0	6,014 17 6	118,613 7 6
Pearson & Co., Ltd.	109,675 18 8	4,856 1 1	114,531 19 9
W. Griffiths & Co., Ltd.	105,617 15 7	5,345 11 3	110,963 6 10
E. Nuttall & Co.	104,334 3 7	4,925 18 7	109,260 2 2
J. Mowlem & Co., Ltd.	103,282 7 2	5,277 12 9	108,559 19 11
R. W. Blackwell & Co., Ltd.	101,764 0 3	5,882 18 1	107,646 18 4
J. G. White & Co., Ltd.	101,507 5 7	4,532 2 10	106,039 8 5
Krauss & Son	98,870 5 1	4,558 10 6	103,428 15 7
Dick, Kerr, & Co., Ltd., London*			

‡ Incomplete tender.

[Messrs. Dick, Kerr, & Co., Ltd., will be allowed to sub-let to the undermentioned firms (or to such other persons or firms as may be approved by the engineer under the contract) the following portions of the work in connexion with the tramways from Trafalgar-road, Greenwich, to Blackwall-tunnel, and from New Cross-road to Rushey-green, Catford, namely—(1) to the Hadfield Steel Foundry Co., Ltd., the manufacture of the special work (consisting of points, crossings, etc.); (2) to the Anderston Foundry Co., Ltd., of Middlesbrough, the manufacture of the cast-iron yokes; (3) to Messrs. Doulton, Ltd., of London, the manufacture of the porcelain insulators; and (4) to Messrs. Bayliss, Jones, & Bayliss, Ltd., of Wolverhampton, the manufacture of the tie-bars, etc.]

LONDON.—For painting and cleansing works at the City Hall, Charing Cross-road, for the Westminster City Council:—

Kirk & Kirk	£729 0	J. Roberts	£650 0
J. R. Sims	712 0	H. & E. Lea	625 0
T. Haylock	695 0	J. Styles & Son	567 0
T. Coulthard	673 10	Love & Co.*	536 5

LONDON.—For new penstock gearing and tide flaps, Northumberland-street and Regent-street sewers, for the London County Council:—

J. Stewart & Sons, Ltd.	£600
Yates & Thom	497
A. Goodwin & Son, Ltd.	485
J. Cochrane	430
Glenfield & Kennedy, Ltd.	395
Flavell & Churchill	376
Hunter & English	349
J. Blakeborough & Sons, Brighouse*	313

LONDON.—For electric light installation, Wapping Fire Station:—

O. Clark & Co.	£150 0
National Electric Construction Co., Ltd.	145 0
F. J. Coleby & Co.	137 10
W. H. Johnson	136 0
R. Dawson, Ltd.	132 12
Durell & Co.	130 10
Barlow & Young	130 0
A. H. Marshall	125 0
Tamplin & Makovski, 27, Charles-street, Haymarket, S.W.*	115 0

LOSSIEMOUTH.—For erecting business premises. Mr. R. B. Pratt, architect, Town and County Bank-buildings, Elgin:—

Mason: J. McPherson, Elgin
Carpenters: W. Ritchie & Son, Lossiemouth
Plumbers: W. Lyon & Son, Elgin
Slater: J. Wilson, Lossiemouth
Plasterer: C. Menzies, Lossiemouth
Painter: W. McGillivray, Lossiemouth
} £950

MERTHYR.—For rebuilding Nos. 21, 22, and 23, Castle-street. Mr. C. M. Davies, architect, 112, High-street, Merthyr:—

J. Williams	£696	Hall Bros.	£533
J. Jenkins	677	E. L. Sullivan, Merthyr*	513
S. Hawkins	660		
Jenkins Bros.	598		

MERTHYR.—For additions to Brynglas, for Dr. Webster, Merthyr. Mr. C. M. Davies, architect, 112, High-street, Merthyr:—

R. Lloyd	£1,053 17 6	M. Warlow	£776 0 0
J. Jenkins, Canal Wharf, Merthyr*	779 17 0		

MIDSOMER NORTON (Somerset).—For the erection of a villa residence at Norton Hill, Midsomer Norton, for Mr. E. J. King. Mr. W. F. Bird, architect, Midsomer Norton. Quantities by the architect:—

J. Long & Sons	£1,985 0 0	J. Bird	£1,400 0 0
A. Wills & Sons	1,725 0 0	W. Tovey, Midsomer Norton‡	1,365 8 0
W. Webb	1,717 0 0		
F. J. Amery	1,670 0 0		
T. Foster	1,547 9 3		

‡ Accepted subject to amendment.

MIDSOMER NORTON (Somerset).—For certain alterations to the Wilts and Dorset Bank, Midsomer Norton, for the Wilts and Dorset Banking Co. Mr. W. F. Bird, architect, Midsomer Norton:—

W. & A. Edgell	£968 0	W. Tovey, Midsomer Norton‡	£747 10
J. H. Tovey	765 0		

‡ Accepted subject to amendment.

NEW SARUM.—For road works, etc., Fair View-terrace and Chapel-place, for the Town Council:—

Fair View-terrace.

Wort & Way, Salisbury £320

Chapel-place.

Wort & Way, Salisbury 50

OLDBURY.—For erecting a block of schools at Road End, for the Education Committee. Mr. A. Long, architect, New-street, West Bromwich. Quantities by architect:—

M. Round, Dudley, Staffs* £5,750

PONTEFRACT.—For internal alterations and lavatories, for the Cartner's Arms Inn, Pontefract. Messrs. Garside & Pennington, architects, Pontefract and Castleford:—

Gelder Bros. & Woodcock, Northgate, Pontefract* £140 19 6

PONTNEWYDD (Mon.).—For pulling down and rebuilding the King's Head Hotel, for Messrs. Phillips & Sons, Ltd. Messrs. Swalwell & Havard, architects and surveyors, Steam Packet-chambers, Dock-street, Newport, Mon.:—

Poulton & Whiting	£4,155 0 0	C. Lock	£3,785 0 0
D. W. Pugh	4,001 6 6	F. Powles	3,777 0 0
J. Linton & Co.	3,900 0 0	Clements & Co.	3,732 0 0
W. Jones & Son	3,817 0 0	C. H. Reed	3,500 0 0
J. Jenkins	3,804 0 0	E. C. Jordan	3,487 0 0
D. W. Richards	3,798 0 0	Dean & Co.	3,407 2 0
		A. S. Morgan & Co., Newport*	3,374 5 11

RAMSBOTTOM.—For storm-water filters and storm overflow at sewage works, Summerseat, for the Urban District Council. Messrs. J. Diggle & Son, engineers, Hind Hill-street, Heywood, and Westminster, S.W.:—

E. Taylor, Blackpool £435 13 9

SALISBURY.—For sewers and sewage disposal works (Contract No. 2), for the Corporation. Sir A. Binnie & Sons, engineers, 9, Great George-street, Westminster, S.W.:—

Wort & Way, Salisbury* £14,933 12

SALISBURY.—For sewers and sewage disposal works (Contract No. 1), for the Corporation. Sir A. Binnie & Sons, engineers, 9, Great George-street, Westminster, S.W.:—

Wort & Way, Salisbury*..... £24,153 10 10

SALISBURY.—For extension of public swimming baths, for the Urban District Council:—

Wort & Way, Salisbury* £235

SKETTY.—For erecting ten pairs of villas at Sketty, Swansea, for the Trustees of the Coedaeson Building Club. Mr. B. C. Deacon, architect, 20, Fisher-street, Swansea. Quantities by Mr. W. P. Horsburgh, Central-buildings, Liverpool:—

Fuge & Rosser	£15,926 0 0	J. & F. Weaver	£13,449 0 0
Brown & Backhouse	15,790 0 0	T. D. Jones	13,316 0 0
T. Richards	15,465 10 11	Hughes & Stirling	13,215 0 0
A. White & Sons	15,127 0 0	S. Fowler	12,600 0 0
D. Jenkins	13,995 0 0	W. Griffiths & Sons	12,500 0 0
Lloyd Bros.	13,887 5 7	J. Pye & Co., Morecambe‡	12,399 0 0
H. Billings	13,800 0 0		
J. Marles & Sons	13,500 0 0		

‡ Accepted subject to certain deductions being made.

SHENFIELD.—For the erection of a house, Worrin-road, Shenfield, Essex, for Mr. W. E. Spells. Mr. H. R. Bird, architect and surveyor, Brentwood:—

R. Claydon	£694 10	E. Dix	£685 0
F. W. Jarvis	693 0	F. W. Burtwell*	675 0

SOUTHAMPTON.—For private street works in Howard-road, for the Corporation:—

H. Lawrence	£1,625 0	F. Osman	£1,443 10
H. J. Hood	1,539 0	J. Butt*	1,443 0
Douglas & Richard	1,501 12		

[All of Southampton.]

STAFFORD.—For the Sir Thomas Salt memorial additions to Stafford Grammar School, for the Governors. Mr. H. T. Sandy, architect, 22, Green-gate, Stafford:—

G. Dyke	£1,718 9 0	T. Moss	£1,547 0 0
G. H. Marshall	1,631 0 0	C. J. Nevitt	1,539 9 8
F. Espley & Sons	1,593 0 0	Jervis Bros.	1,490 0 0
G. Hodges	1,593 0 0	Adams & Pemberton, Stafford*	1,489 0 0
T. Lowe & Sons	1,590 0 0		

TON.—For erecting a schoolroom on St. David's Church ground, for the Rev. Canon Lewis. Mr. Jacob Rees, architect, Pentre:—

W. Parry	£1,450 0 0
A. Richards & Sons	1,403 0 0
E. Jones	1,365 3 2
W. E. Wallis, Ystrad Rhondda*	1,300 0 0

WEST BECKHAM.—For alterations and additions to Infirmary at West Beckham Workhouse. Mr. T. Inglis Goldie, architect and surveyor, Bank Plain, Norwich:—

	Alterations and Additions.	Verandah and Staircase.	Side Staircase.
W. J. Hannant	£779 0 0	—	—
J. W. Weston	763 0 0	£80 13 0	£41 0 0
R. Chapman	735 0 0	66 0 0	40 0 0
R. G. Payne	721 17 7	60 12 0	42 9 0
C. T. Baker, Ltd.	712 12 4	53 19 2	40 5 6
J. W. Neate	706 3 6	57 4 0	42 2 6
J. Gaze	698 18 0	62 0 6	76 17 6
R. C. Watts	697 2 7	59 3 0	39 9 6
J. Needs	686 0 0	68 0 0	41 0 0
Appleton Bros.	675 11 1	57 0 0	39 19 6
H. Bullen*	648 0 0	71 15 0	38 19 0

WOODFORD.—For the erection of a detached house at Woodford, Essex. Mr. H. Riches, architect, 3, Crooked-lane, King William-street, London, E.C.:—

T. Osborn & Sons* £1,268

W. H. Lascelles & Co.

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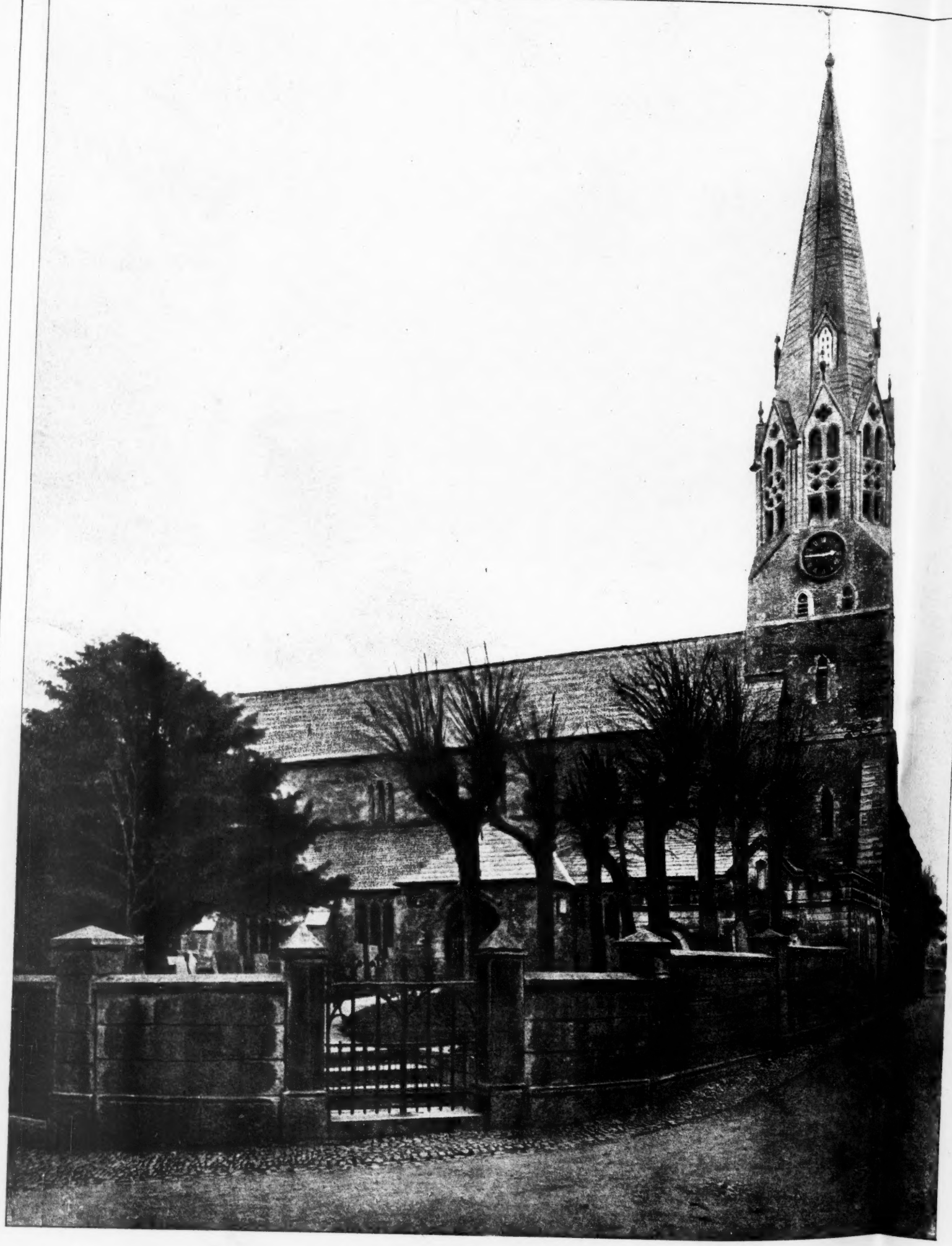

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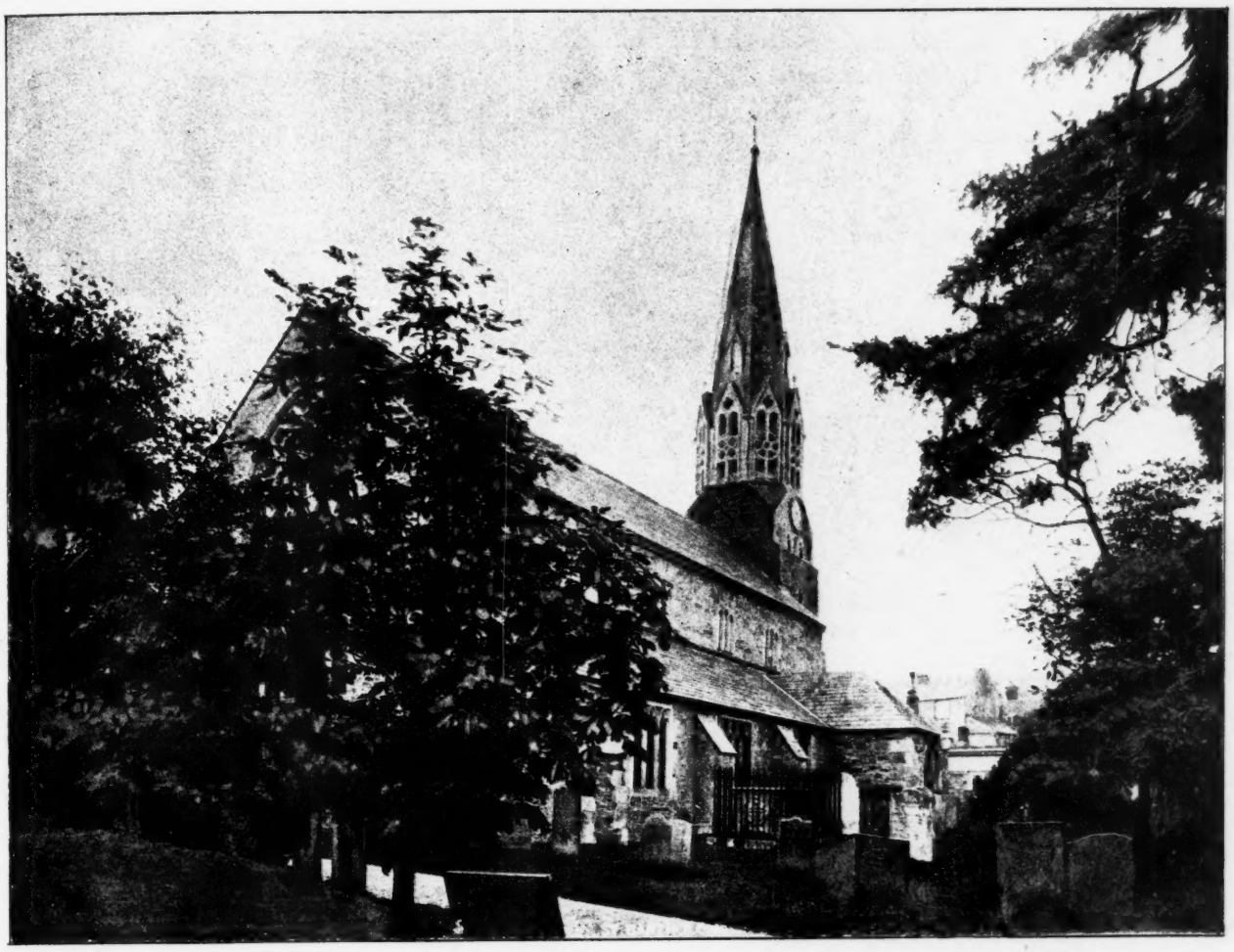

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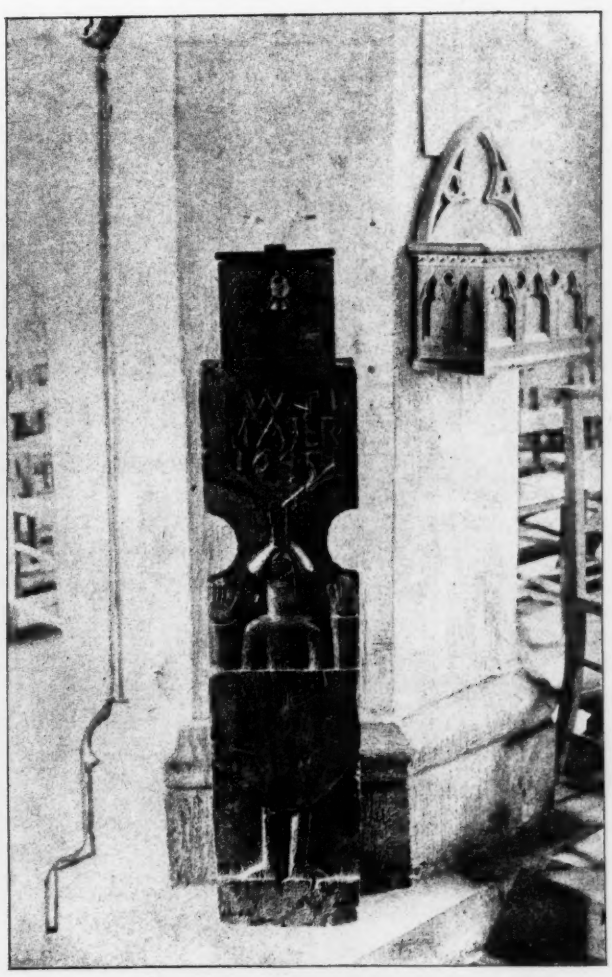

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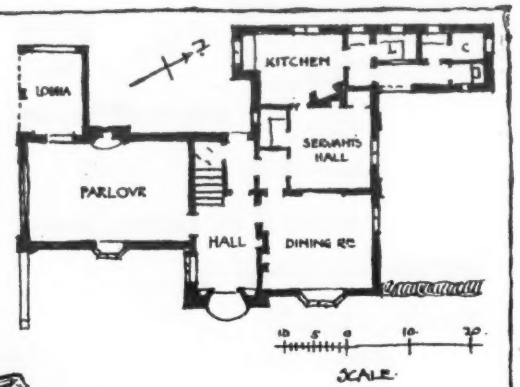

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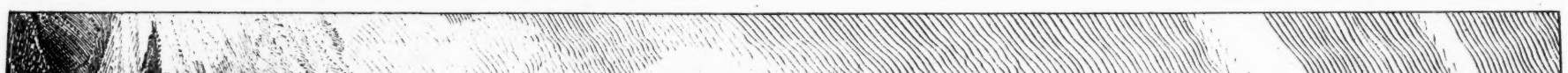

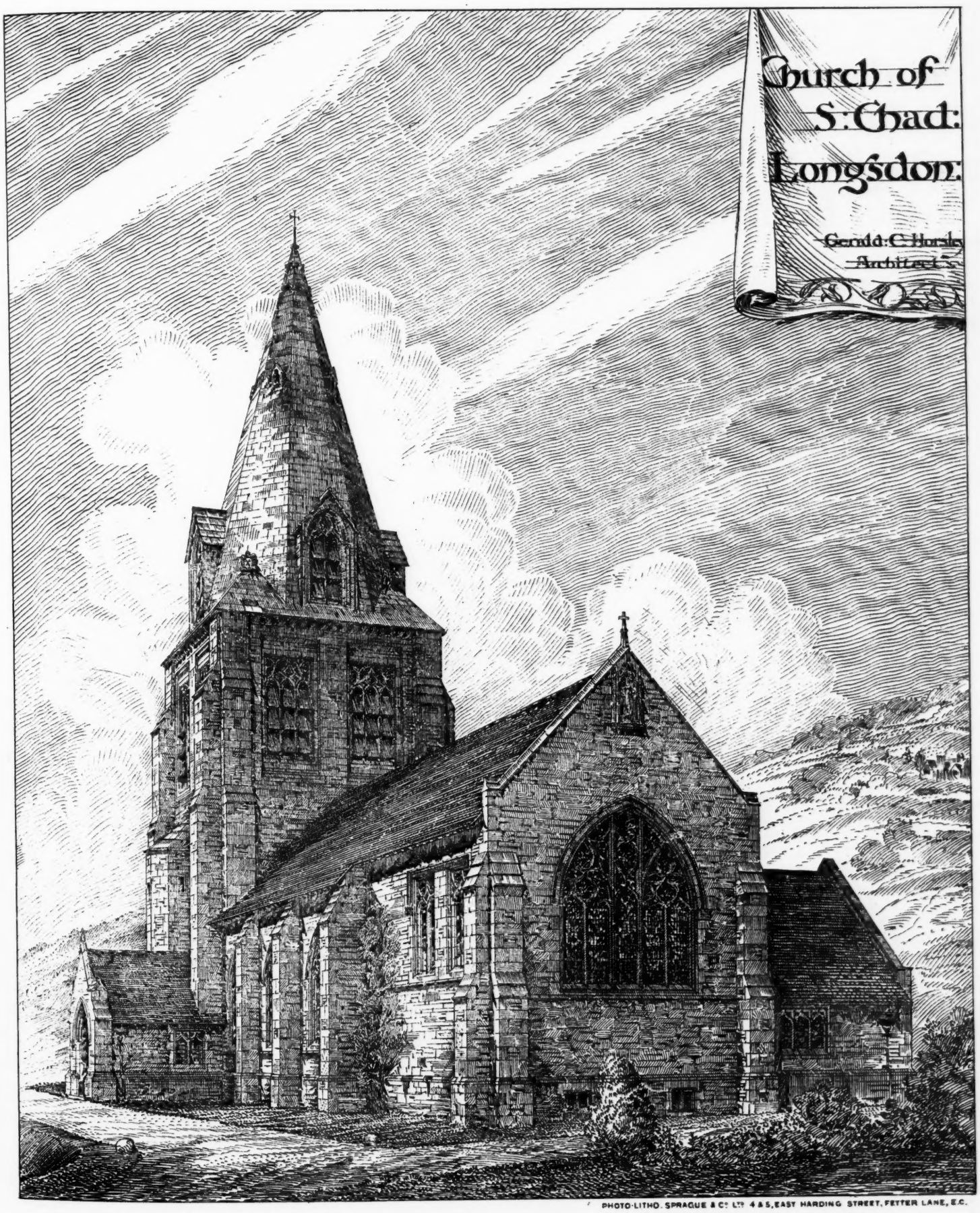

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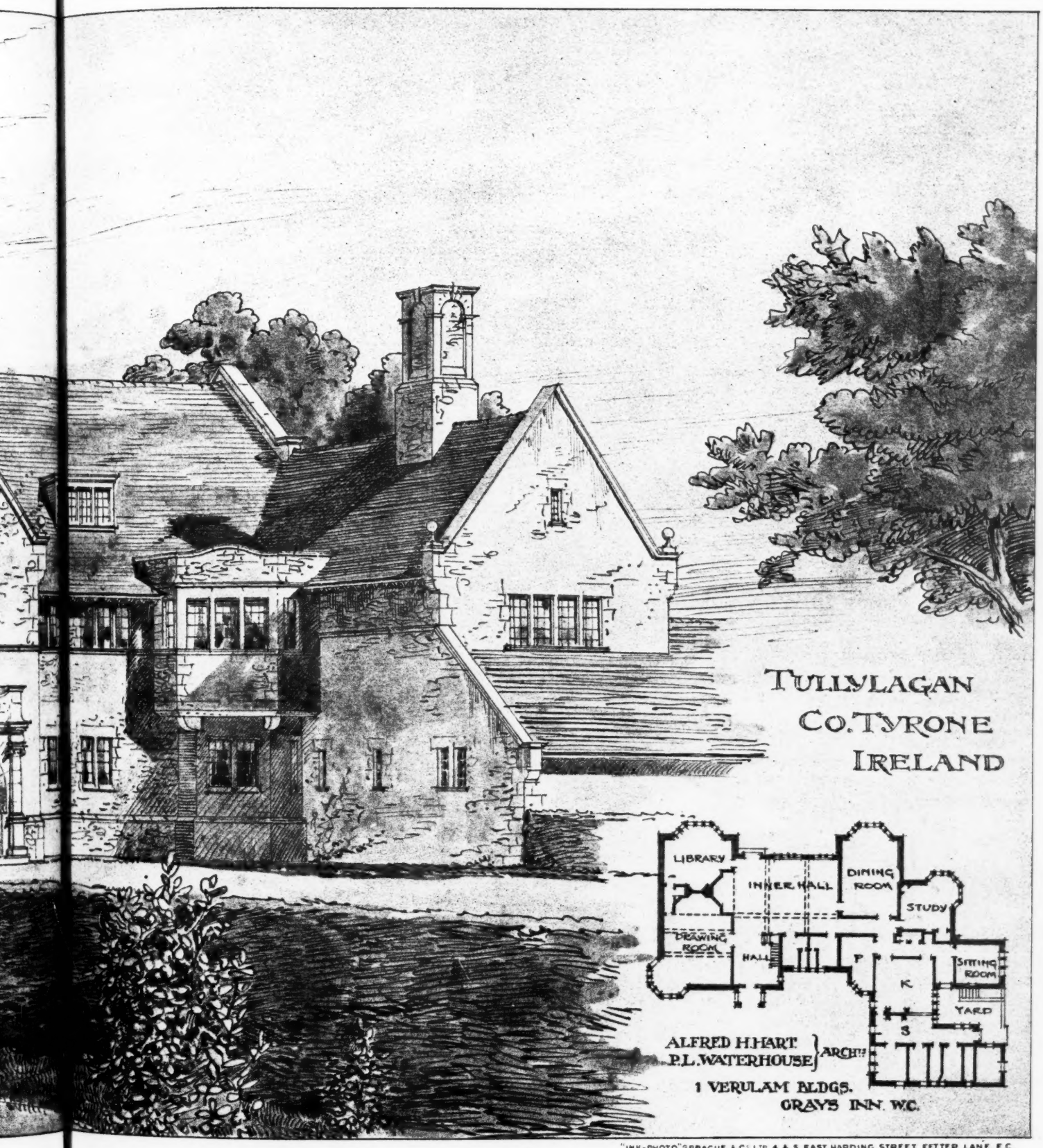

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